The OIL and GAS JOURNAL

PRODUCING REFINING ENGINEERING MARKETING

VOL. 29. NO. 18. TULSA, OKLAHOMA, SEPTEMBER 18, 1930

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May Experience Banner Year in 1931

Highest daily average estimated total production in 1929, week ended Aug. 24, 2,975,435 bbls. Lowest in 1929, Dec. 27, 2,595,320 bbls.

Crude Oil Situation in Good Shape. Prosperity Seems Assured if Refiners Will Further Reduce Gasoline Stocks

Highest daily average estimated light oil production in 1929, week ended Sept. 14, 2,534,524 bbls. Lowest in 1929, Apr. 13, 2,142,036 bbls.

By Andrew M. Rowley

If the petroleum industry can be satisfied with a continuance of present conditions during the remainder of this year and will keep 100 per cent effective existing conservation agreements, there is every indication 1931 will be a banner year. That seems to be the general sentiment at this time and there certainly is a good statistical basis for that assumption.

Crude oil production, for several weeks, has been averaging 500,000 barrels daily less than during the similar period last year. No general increase in output is expected. It seems more probable further decreases will be recorded as proration orders are made effective in Texas and problems in California and Oklahoma are ironed out. California operators are considering a further reduction of approximately 46,000 barrels daily in that State. Oklahoma operators are awaiting anxiously the decision of the State Supreme Court in the suit instituted by a company operating in the Oklahoma City Field to test the constitutionality of the law empowering the State Corporation Commission to curtail production.

The refined oil situation warrants close attention, especially upon the part of refiners. It has become increasingly evident that crude oil prices depend largely upon the status of the gasoline market. Excessive stocks of gasoline this year undoubtedly have exerted a greater influence on the general price structure than any other factor. Stocks of gasoline still are too high and must be reduced very materially before any great permanent improvement in the general situation may be expected. The refining industry can reduce these stocks. Crude oil producers have proved conclusively what can be done when a real effort is made at curtailment.

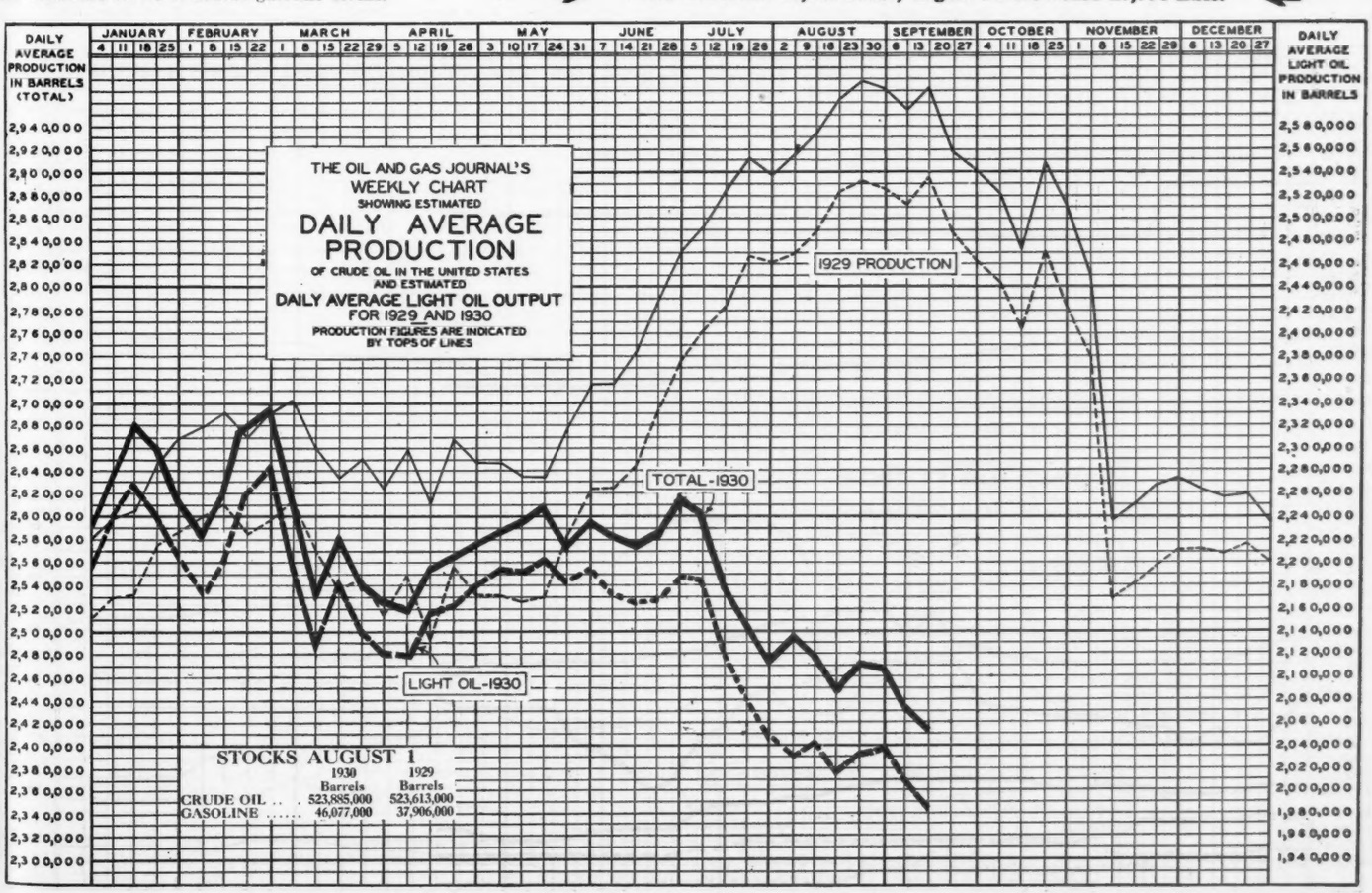
There is no question but that the greatest contributing factor to future prosperity of all branches of the industry would be a big reduction in the quantity of gasoline held in storage. It was only a short time ago that it was considered absolutely impossible to get producers to agree to a general curtailment of production. That idea has been dissipated. It is up to the industry now to make a real and concerted effort to reduce gasoline stocks.

PRODUCTION IN THE UNITED STATES

Estimated daily average production of light and heavy gravity oil in the United States for week ended September 13 and a comparison with the previous week follows:

	—September 13—		—September 6—	
	Light	Heavy	Light	Heavy
Oklahoma—				
Oklahoma City	92,670	.....	105,410	.....
St. Louis-Pearson	23,510	.....	24,315	.....
Sem'nole	141,720	.....	137,945	.....
Northern miscellaneous	228,915	.....	235,435	.....
Southern fields	61,850	.....	61,440	.....
Total Oklahoma	548,705	.....	564,545	.....
West Texas—				
Hendricks	68,045	.....	63,000	.....
Yates	107 050	.....	107,995	.....
Remainder	102,915	.....	101,042	.....
Total West Texas	278,010	.....	277,037	.....
North Louisiana	34,530	5,300	35.195	5,245
Arkansas	16.840	36,725	16,765	36,735
North Central Texas	116,147	.....	122,432	.....
Texas Panhandle	84,384	.....	96 541	.....
East Central Texas	41,192	.....	40,758	.....
Kansas	118,335	.....	113,485	.....
Total Mid-Continent area	1,238,143	42,025	1,266,758	41,980
Gulf Coast	.....	194,674	.....	195,999
Southwest Texas	.....	103,346	.....	94,997
Eastern	120,000	.....	120,000	.....
Rocky Mountain area	109,819	.....	106,478	.....
California—				
Santa Fe Springs	107,000	.....	106 500	.....
Long Beach	103,000	.....	101,500	.....
Playa Del Rey	20,000	.....	18,500	.....
Elwood	37,000	.....	43,000	.....
Ventura Avenue	46,500	.....	47,000	.....
Kettleman Hills	19,500	.....	16,000	.....
Remainder of State	187,000	89,000	190,000	89,000
Total California	520,000	89,000	522,500	89,000
Total United States	1,987,962	429,045	2,015,736	421,976
Grand total	2,417,007		2,437,712	

→ **Total Decrease 20,705 Bbls.; Light Oil Decrease 27,774 Bbls.** ←


DAILY AVERAGE PRODUCTION IN BARRELS (TOTAL)
DAILY AVERAGE LIGHT OIL PRODUCTION IN BARRELS
JANUARY FEBRUARY MARCH APRIL MAY JUNE JULY AUGUST SEPTEMBER OCTOBER NOVEMBER DECEMBER
THE OIL AND GAS JOURNAL'S WEEKLY CHART SHOWING ESTIMATED
DAILY AVERAGE PRODUCTION
OF CRUDE OIL IN THE UNITED STATES AND ESTIMATED
DAILY AVERAGE LIGHT OIL OUTPUT FOR 1929 AND 1930
PRODUCTION FIGURES ARE INDICATED BY TOPS OF LINES
1929 PRODUCTION
TOTAL-1930
LIGHT OIL-1930
STOCKS AUGUST 1
1930 1929
Barrels Barrels
CRUDE OIL .. . 523,885,000 523,613,000
GASOLINE 46,077,000 37,906,000

Refiners Again Advance Gasolines

Quotations One-Eighth to One-Fourth Cent Higher With General Increase in Natural Gasoline. Low Cold Test Fuels in Demand

By C. O. Willson

A more optimistic feeling regarding prices on gasoline and several other refined products continued to rule in Oklahoma (Group 3) during the past week despite the bearish statements that a seasonal slump in motor fuel was weakening the statistical situation of the most important product.

Several of the larger refiners in the State advanced their price on the 58-60 U. S. Motor grade from 6¼ to 6⅜ or 6½ cents in spot sales to the jobber trade. Natural gasoline manufacturers followed the first of this week by establishing a firm market of 5¾ cents for all grades of their product.

While there were reports within the trade of price concessions on the U. S. Motor grade, it was apparent that there was a more general acceptance of the price advances among the buyers than at any time since the first of the month when the initial general advances were made in gasoline quotations. Buyers who stayed out of the market in expectation of a break in the market were being forced to purchase to cover immediate requirements and it is expected that the volume of this business will increase the latter part of the month. Although there has been seasonal decline in actual consumption, refiners with their own retail outlets state that total consumption is running ahead of last year with indications that this trend would continue over the remainder of the year.

Furnace Oil Demand

The demand for the better grades of fuels continues to expand. Refiners who have a low cold test furnace oil with a low flash, meeting the usual requirements as to odor and color, have many inquiries from both spot buyers and those who are willing to buy on contracts covering the season which extends until next spring. A few refiners have also been able to advance their prices on low cold test grades of residuum fuel oils regardless of gravity, although the general price range on these grades remains unchanged as the high cold test material is still available at low prices.

Many who have made a study of the fuel market are of the opinion that the better grades of furnace oil material will become more and more scarce as the season advances with constantly widening spreads between these grades and those which fail to meet one or more of the specifications required by most buyers. The general market condition which has brought an expansion in the demand for fuel oil cuts as charging stock for cracking units, despite a general reduction in crude oil runs to stills, has tended to restrict the quantity of desirable products suitable as fuel oil for furnaces in homes, office buildings, hotels, apartment houses and similar buildings.

The distributor who serves this class of the fuel consuming trade is discriminating as to the quality of material. In general the small domestic burner used in homes requires a flash under 200° F. and a cold test under 20° F. Some buyers insist on a flash as low as 165° F. and a zero cold test. This domestic burner trade is also usually particular as to color requiring a straw or amber. Sweet odor and low sulphur content are other requirements.

Usually the owners of office buildings, apartments houses, etc., are not so particular as the domestic burner trade, but their requirements are more rigid than the industrial trade. They require low cold test material and some insist on flash under 225. High sulphur content is usually not acceptable and a strong odor is objectionable.

A few refiners due to the characteristics of their crude oil and their methods of plant operation readily furnish this special fuel oil and furnace oil trade with the products required. These refiners, however, are the exception. Most refiners must sacrifice yields of gasoline or kerosene and add to their plant operating costs if they participate in this class of business. The only low cold test material that some operators have comes from their cracking and rerun distillate operation. Usually these products must be blended with a straightrun distillate or naphtha cut to meet the other necessary specifications. In some cases a costly chemical treatment is necessary to eliminate objectionable odors or reduce sulphur content.

It is due to these conditions that many refiners would be willing to stay out of this part of the refinery market if it were feasible from the sales end to do so. Some confine their output to cover the requirements of regular customers who are also buyers of gasoline and other refined products. Other refiners, due to the depressed market situation, are willing to make most any product for which there is a demand, and it is this situation which has kept furnace oils from occupying a

(Continued on Page 154)

REFINED MARKET BAROMETER

The advance in California gasoline prices was the important change of the week in refined prices. The advance in the West Coast State became effective despite the highly competitive situation which is characteristic of all refinery groups. Scattered advances in gasoline prices were also made in the Mid-Continent area. Reductions in gasoline tank wagon and service station quotations at several points continued to disturb the refinery market. No important changes in kerosene were reported. Several refining centers report an active demand for furnace oils. The heavier fuel oil grades are unchanged. More activity in lubs reported in eastern markets with less distress material. Wax more active. Natural gasoline advanced in Mid-Continent.

Mid-Continent—Quotations on refinery gasoline and natural gasoline higher. More active demand for low cold test grades of fuel oil and furnace oil. Kerosene quiet. No change in wax and lubricants.

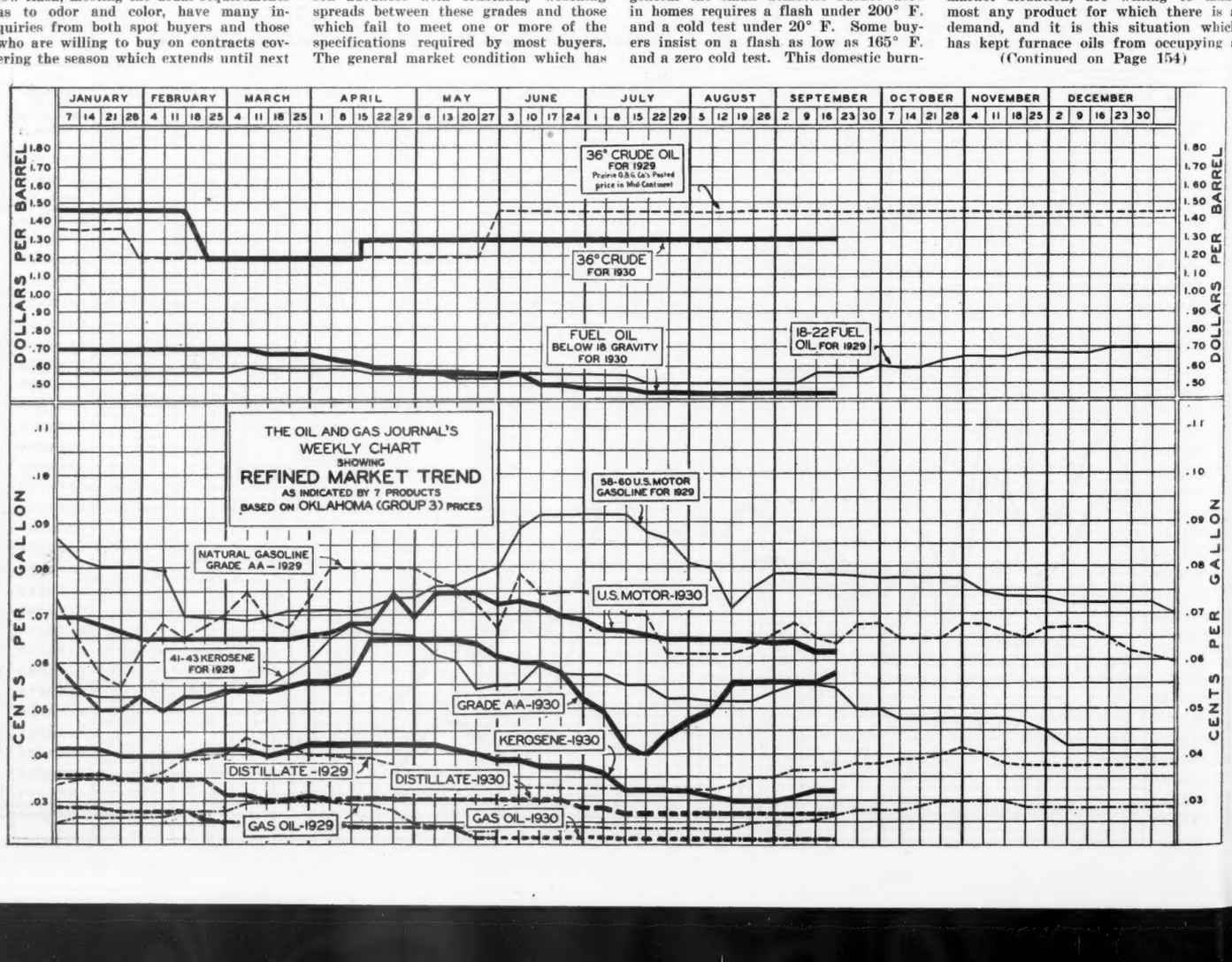
East Coast—Tank car prices on gasoline unchanged despite important reductions in tank wagon prices in New York City and other points. More optimistic feeling in regard to lub oils and wax. Fair movement of fuel oil. Export situation unsettled with wide ranges in prices.

Pennsylvania—More active demand for lubricants and wax.

Gulf Coast—Gasoline market steady. Fuel oil unchanged.

Chicago—More active demand for heavy oils. Spot gasoline market inactive with fair movement on contracts. Kerosene quiet.

California—Prices on gasoline advanced 1 cent. Expect natural gasoline to be advanced.



Advantages of Unitization in Seminole

Benefits Would Have Accrued to All Interests if Acreage Had Been Pooled Before Drilling Was Started

By L. G. E. Bignell
Petroleum Engineering Editor

The question has often been asked, "Would unitization have prevented the highly competitive drilling campaign in Seminole area if it had been applied early in the development period?" The answer is, "Yes," but each person making such an answer will immediately qualify this statement with one or more reasons why it could not have been put into effect. While these qualifying conditions may be quite logical it should be remembered that the industry did get together to prorate the Seminole area after production had climbed to that level where prices were being cut so low that small wells were making but very little, if any profits. The now famous editorial, "It Can Be Done," that appeared in The Oil and Gas Journal on April 28, 1927, opened the way to the New York City conference of the executives of the major oil companies on May 12, 1927, when Ray M. Collins was made umpire for the district and proration was made effective.

This emphasizes the fact that the operators can get together upon common grounds when occasion demands, but it would have been far better to have had an agreement regarding drilling operations before, rather than after, the market had been swamped with oil that it did not need.

That the conditions such as actually occurred during the period of intensive activity in Seminole area were anticipated is clearly shown in the following quotation from a report of a committee comprised of E. C. Lufkin, H. L. Doherty, W. N. Davis and W. C. Teagle to the directors of the American Petroleum Institute, September 22, 1923, as follows:

". . . The present conditions under which crude oil is now produced, forced upon the industry by existing laws, coupled with the peculiar nature of petroleum deposits, result in great waste and the violation of all the important principles of conservation, and this is the underlying and fundamental cause of the wide fluctuations in price and the unsatisfactory conditions of today."

Quick Change in Conditions

While the advantages of unitization were being debated and many operators thought it offered a solution to many of the evils admittedly existing in the competitive drilling conditions, the fact still remained that both Federal and state laws do not favor the forming of units to develop oil pools in an orderly manner and the old customs and traditions of the industry still prevailed.

The decision of a Pennsylvania jurist who fancied he noted some resemblance between the actions of wild game and oil, and saw fit to mention this supposed resemblance in his decisions rendered by his court are still held to be effective[1].

O. E. Kiessling, mineral economist, Washington, D. C., in his paper presented before the New York meeting of the A.I.M.E., February, 1928, "Co-operative Development of Oil Pools," states that, "with the accumulation of a geological knowledge which we once lacked, the courts have executed an 'about face' during the past few years. The inconsistency of the old principle has been gradually recognized so that at present all but the Federal Courts and those of four states have repudiated it. The courts dissenting from the Indiana view that no title in oil exists until it is brought to the surface have declared title to oil and gas in place; but they have not carried the new precedent through to its logical conclusions. The 'change' has been merely a clever bit of rhetoric on their part, and the legislatures have not made the important provisions necessary to enable the owner of oil and gas properties to enjoy reasonably that which he is supposed to own."[2]

These laws and customs lead the oil companies to operate independently after a pool has been opened and the effort of everyone is directed to drilling and producing as rapidly as possible.

In discussing "Unitization" at the October, 1929, meeting of the petroleum division of the A.I.M.E. in Tulsa, W. S. Farish, president, Humble Oil & Refining Co., stated in part, "My position and the position of my company on this question are matters of record. We believe and we have publicly urged for the last two years that no wildcat wells be drilled until leases have been pooled over the entire prospective area; or at least not until every effort has been made to effect such a pool. I cannot emphasize too strongly the possible good that can come from adoption of this policy generally. Our lawyers maintain that pooling agreements of this character are legal, even in Texas where antitrust laws are particularly strict. In this policy the industry has a clear field and the chance to benefit itself immensely; it is itself to blame if it does not take advantage of it."

There was no attempt made to unitize the Seminole area before active drilling started and therefore, once the rush for production was on, there was no chance to develop unit operation of leases.

Attempts to Control Rate of Drilling

There are records of several attempts having been made in the fall of 1926, when it was very apparent that the Seminole area was going to place on the market before January 1, 1927, more oil than it could reasonably be expected to absorb, to restrict drilling operations, and delay the completion of wells then being drilled.

These meetings for a time held forth considerable promise of success, and with the enforcement of proration for the wells then completed, would have removed the menace of overproduction, which so quickly followed when these agreements failed to secure the full support of all companies interested.

The leases in the Seminole area had either been acquired by major companies some time prior to the completion of the first well into the Wilcox sand in July, 1926, or were quickly bought up from the individuals owning them when the rush to drill this area started.

Once the lease was secured there seemed to be little left to do but drill and produce it to its full capacity and the results of this policy are so well known that they hardly need repeating here. After the flood of oil had reached its peak proration was made effective and this pioneer effort to get together and regulate the amount of oil that pools should produce has since become a recognized part of the industry's program and proration is now effective in many of the flush pools and limits the amount of oil to be delivered to the pipe lines from those fields.

Benefits That Would Have Accrued From Proration

A recital of conditions as they might have been if development in the Seminole

(Continued on Page 152)

[1]Westmoreland, etc., Co. v. Dewitt, 130 Pa. St. 235; Brown v. Vandergrift, 80 Pa. St. 147; People's Gas Co. v. Miller, 53 W. Va. 501; Gas Products v. Rankin, 63 Mont. 372; Schulte v. Warren, 218 Ill. 108, etc.

[2]Hearings before the Federal Oil Conservation Board, February 11 and 12, 1926, p. 95; United North & South Oil Co. v. Meredith (Tex. Civ. App.), 258, S. W. 550; Swayne v. Lone Acre Oil Co., 98 Tex. 597; Hall v. Reed, 15 B. Mon. 470, etc.; J. W. Simonton, quoted by D. E. Grear in 1 Texas Law Review, reprinted in 29 West Virginia Law Quarterly, 172.

Julian Case Delays Proration Plans

Temporary Injunction Dismissed, but Oil Men Await Supreme Court's Final Decision Before Acting

A meeting called some time ago by the chairman of the committee of the Mid-Continent Oil & Gas Association to ascertain the supply and demand of petroleum in Oklahoma and to plan for proration in the last three months of the year was adjourned after a short session on Tuesday, September 16, out of respect for the Supreme Court of Oklahoma, which is considering the important case of C. C. Julian Oil & Royalties Co. against the Corporation Commission of the State. In this suit the Julian company seeks a permanent injunction against the commission from interfering with the Julian company in the production of its oil in the Oklahoma City Field, claiming the law under which the commission has been regulating the production in the State is unconstitutional and that the commission has been exceeding the authority granted it under the law.

C. C. Herndon, chairman of the state proration committee, in calling Tuesday's meeting to order stated that no attempt would be made by Oklahoma producers to plan for the last quarter of the year until the court had rendered its decision, which, it was expected, might be done within the next week. He called for a discussion of the general crude oil situation, however, and the meeting was confined to that and to a partial canvass of the crude requirements of the various purchasing companies.

California Situation

E. B. Reeser, president of the American Petroleum Institute, who had just returned from California, warned Oklahoma producers that their problem was only a part of a general acutely serious crude situation. He said the Kettleman Hills Field in California looked potentially bigger than ever before. A well recently completed 3 miles in advance of production started at 10,000 bbls. a day. Its owner asked that it be shut in, but the well when reduced to 7,200 bbls. per day showed a pressure of 2,200 pounds. It is producing from a formation that is 1,300 feet thick. Mr. Reeser said the Kettleman Hills producing area had been proved to be at least 16 miles long, and may be 25 miles long, and no one knows how wide. Every barrel of crude produced in the Kettleman Hills Field represents a half barrel of gasoline, he added. The Elwood Field is believed to have a potential production of from 400,000 to 500,000 bbls. a day and the Venice area at Los Angeles has 130 drilling wells, and he said all but five of the 97 operators drilling in the Venice Field are reported to be stock-selling outfits.

Mr. Reeser mentioned the meeting of California producers which was in session on Tuesday and which, he said, met for the purpose of lowering the production of the State from 596,000 bbls. to 550,000 bbls. per day to conform with crude oil demand. The speaker said California oil men were anxiously awaiting the decision of the Oklahoma Supreme Court on the question of a permanent injunction and that they were pleased when they learned the court had dismissed the temporary injunction, which decision put the Julian company on the same basis as other Oklahoma City producers, pending the final decision of the court.

The Oklahoma City operators had appointed a committee of six producers to represent them at Tuesday's meeting. W. N. Stokes, of the Tom Slick Oil Co., a member of the committee, said his company was heartily in favor of proration. The late Thomas B. Slick, he said, had been a pioneer in the movement and the company he founded would carry on in line with his policy. He expressed the thought, however, that Oklahoma City was bearing more than its fair share in the curtailment movement, and hoped that operators in other fields could be made to see the true situation in Oklahoma City, which he said, he feared they did not fully understand.

Preliminary Survey

A preliminary survey of the demand situation was attempted but many of the smaller purchasing companies were not represented at the meeting and some of the larger companies' representatives were not prepared to say how much their companies would take in the last three months of the year. The Prairie Oil & Gas Co. named 80,000 bbls. as an estimate of its average daily crude runs from Oklahoma in October; Empire Oil & Refining Co., 30,000 bbls.; Sinclair Crude Oil Purchasing Co., 90,000 bbls.; The Texas Company, 30,000 bbls.; Tidal Oil Co., 25,000 bbls.; Gypsy Oil Co., 32,000 bbls.; Consolidated Pipe Line and Pierce Pipe Line Co., 5,000 bbls.; Wirt Franklin Petroleum Corp., 2,000 bbls., and Indian Territory Illuminating Oil Co., 2,000 bbls. The Carter Oil Co., which is now taking 64,000 bbls., was not prepared to make an estimate on the last quarter's crude oil requirements, and the Shell, Magnolia, and Pure Oil Co. representatives said they would ascertain their companies' needs and report to the proration committee.

Toward the close of the meeting Wirt Franklin protested against purchasing companies drawing oil from storage. He believed the producing situation was such that crude requirements should be filled from current production. He asked for a canvass on the crude stock situation in the State from January 1 to the present.

Temporary Injunction Dismissed

The supreme court of Oklahoma, on Thursday, September 11, vacated the temporary injunction granted the C. C. Julian Oil & Royalties Co. against the Oklahoma Corporation Commission which for a short time had prevented the commission from enforcing its proration or-

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Gas Recovery and Stabilizing Plant

Novel Unit at Kanotex Refinery Gives Large Yields of Closely Fractionated Products. Operation Flexible

By F. A. Deering
Superintendent the Kanotex Refining Co.

The vapor recovery plant in one form or another has long been considered a necessary adjunct to the refinery. Installations have been of various types, following in the larger refineries the methods and developments of the natural gasoline department of the industry, and in the smaller plants more generally being the product of ingenuity in accomodating the materials at hand to the service of recovering a reasonable amount of the volatile so-called "noncondensable" gases present.

Until the general advent of cracking, due partly to the high gasoline content or "richness" of these gases, and largely to the rudimentary stage of absorption practice, most of the plants made use of the compression method. By compressing in several stages interspersed with intercoolers and separators, quite good recoveries were possible from plants handling "tail gases" and tank vapors. These vapors often contained as high as 15 gallons or more per 1,000 feet of recoverable gasoline. Like all compression plant gasolines however, these products were very wild and suffered rather high weathering losses.

With the extension of large scale cracking however, refineries found themselves with millions of feet of gas on their hands which was comparatively dry, but which contained from 2 to 5 or 6 gallons per 1,000 feet of usable gasoline. Burned under stills and boilers this gasoline represented an economic waste but in the compression plant only a relatively small part could be recovered. However, at this juncture, the absorption type of plant came to the rescue.

In this type, the desirable gasoline together with some of the lighter products is absorbed in a heavier oil with which it is brought into intimate contact in an absorber of some sort, now usually of the bubble type. This "rich" oil is then charged to a still, and the vapors conducted through fractionating equipment, which removes entrained absorption oil, to a condenser, where the desired fractions are condensed, some of the lighter fractions coming off in gaseous form to be returned to the absorber, or to the residue gas.

This method was a big improvement, giving a much more stable gasoline and much higher recoveries at lower installation and operating costs, and has largely supplanted the compression plant. However, the product still contained considerable propane, and more than a desirable amount of butane.

The next step, also following along the trail of the natural gasoline department, was to charge this material to a stabilizer or rectifier in which by closely controlled fractionation, the undesirable light ends were removed, leaving a stable product for use in blending.

Throughout this development, gases for treatment had chiefly been derived from three sources, look boxes or gas separators on streams from crude and rerun distillation, vapors from tanks recovered by rather elaborate collecting systems, and "fixed" gases from the gas separators of pressure stills.

Recent Developments

A more recent tendency is to stabilize the crude oil and pressure distillate before the usual processes of fractionation, in the case of the former, and chemical treatment, and fractionation in the case of the latter.

The butane is largely removed, partly condensed, the amount of condensate depending on the pressures employed in stabilization and the temperature of the available cooling water, the condensate mixed with the product of the absorption plant and charged to the final stabilizer mentioned above, and the uncondensed gases composed of butanes and lighter are passed through the absorption plant for the recovery of the remaining desirable constituents. The product of the final stabilizer is stored in cylindrical or spherical tanks under pressure equal to its vapor tension, until used in blending, usually en route to the tank car.

Stabilizing rectifier reflux accumulator and control equipment.

This method eliminates, except for the crude storage tanks, the necessity for the gas collecting system, as the bottoms from the crude and pressure distillate stabilizers, and various fractions thereof, are stable for handling and storage. In view of the fact that the gas collecting system is rather unwieldy to operate as well as expensive to install, this is considered an important advance.

In our plant at Arkansas City, Kans., some recovery of tail gases had been effected by absorption in heavy naphtha, but the gases from tankage were not collected, and those from the pressure stills, about 1,000,000 feet, were burned. They came from the gas separator through a rudimentary absorber making use of the gas oil charged to the stills as absorption oil. Due to the fact that the products absorbed by this method soon built up to a high concentration in the system, little was gained thereby. Tail gases from the crude distillation streams were available in the amount of about 20 feet per barrel of crude charged.

Analysis of Gases

The analysis of these gases, and of the pressure distillate follow:

	Mixed pressure still and crude still gases mol %	Pressure distillate liquid %
Methane	39.9	....
Ethane	17.7	....
Propane	18.9	2.1
Butanes	13.4	7.7
Pentanes	10.1	6.95
Hexanes	...	83.25

Gallons of butane and heavier per 1,000 feet of gas, 8.18.

We considered it feasible at times to utilize most of the available butane, so a plant was designed which would give a maximum butane recovery with the practical elimination of propane.

The gas from the pressure stills was available at 20-pound gauge pressure.

It was decided at the outset to stabilize

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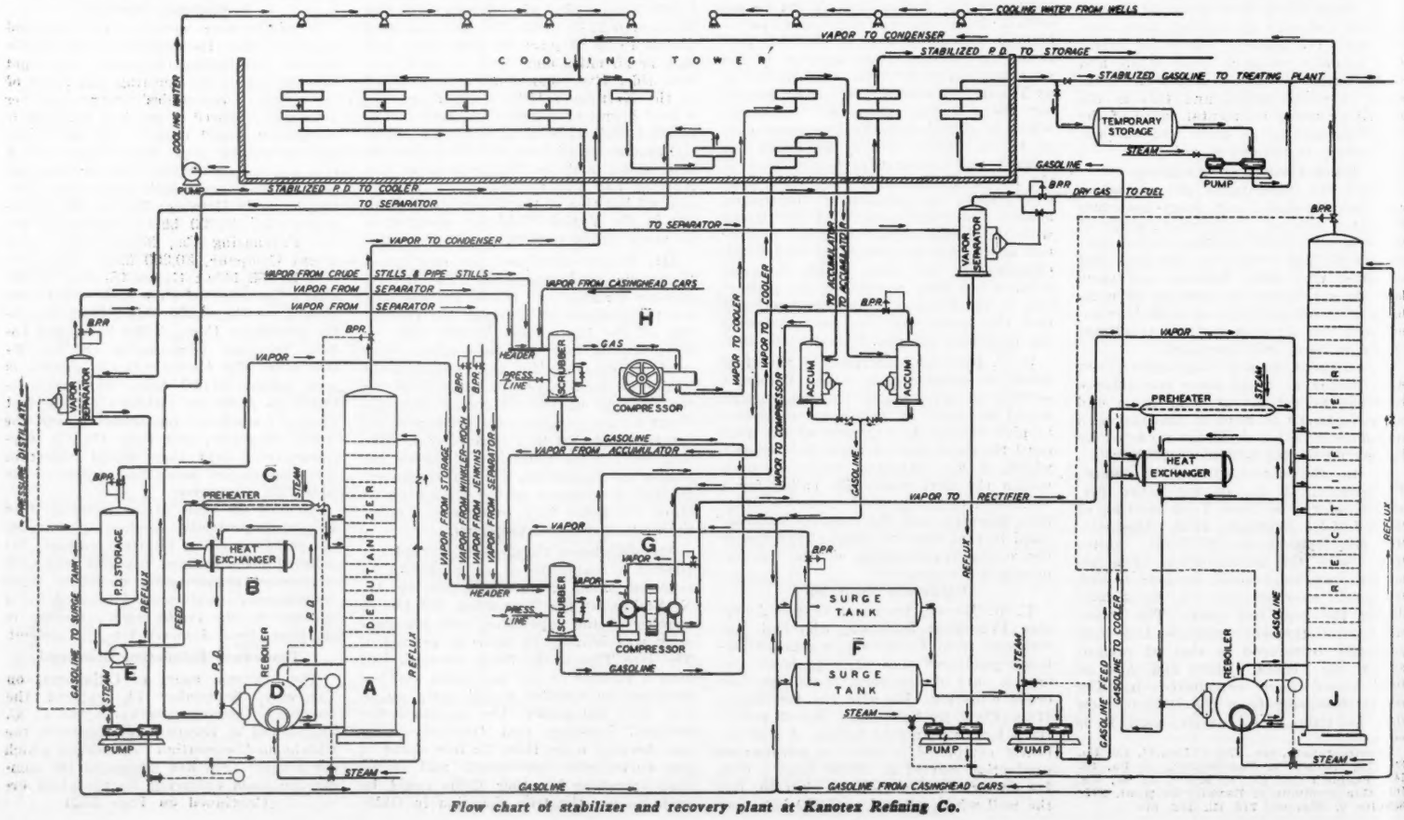

Flow chart of stabilizer and recovery plant at Kanotex Refining Co.

Common Method for Testing Corrosion

Suggestions Offered With View of Having Results From Tests Conform More Closely With Those From Service

By Harry F. Perkins
Technical Director, St. Louis Surfacer & Paint Co.

Working towards the intelligent selection of materials to best withstand attack by disintegrating forces, a method for obtaining experience that will have some standing in common with results from service applications is the first requisite. This method must be practical, simple and indicative. There can be no artificial way to duplicate service conditions and so no method akin to laboratory tests is tenable. On the other hand, full scale tests will only yield inaccurate testimony devoid of basic value.

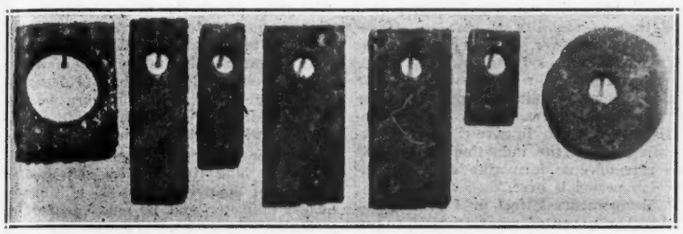

Figure 1—Samples often have to be cut from irregular pieces which matters little if they can be made thin enough.

For more than 60 years scientific investigation of corrosion has been carried on and has resulted in a generally accepted theory of chemical changes taking place and the relative importance of the various factors involved in corrosion, but leaves the problem still in the empirical state. The established theory is not without its compensations as we have learned by comparing the theory with results found in practice. By controlling some of the important factors such as temperature, moisture, pH value, O_2, and contaminating elements which tend to increase acidity, a remarkable reduction in corrosion has been effected.

Important examples expressing the fruitfulness of knowledge so far gained are found in the oil industry. Fractionating towers where, when corrosion is found it can be attributed to the collection of moisture either during distillation or during steaming out or from the atmosphere while standing idle. A small amount of caustic soda added to the steam will neutralize the acid condition of precipitated moisture and by this method corrosion can be reduced 85 per cent; raising the temperature has avoided condensation of moisture and has thereby eliminated corrosion.

Common Method for Tests

The purpose of this discussion is to establish a common method for testing materials to determine their resistance to corrosion in operating service. There must be a degree of exactitude in the test but it is a common fault of engineering to demand exactness in detail while no such thing exists in general practice. It is a devaluating characteristic of many formulated tests to include specifics that in themselves are arbitrary, so to agree on the method for testing which can have quick practical value the element of experienced interpretation of the test may be the most important factor. Accurate testing has its scientific advantages but the large loss from industrial corrosion makes it imperative to act promptly in its prevention and this can be done only if trained judgment is employed.

Practical and reliable corrosion results may be obtained by inspecting a material in service for a considerable period and testing weighable samples at the same time under substantially the same conditions.

Corrosive attack of material in service indicates deformity of molecular structure, metal strains, velocity and temperature effects, concentrated cell action and other conditions not obtained in testing small samples. Small samples allow actual measurement of solubility as well as thickness of scale and tendency to pit. They also allow physical measurements to be made as well as other laboratory examinations. The two experiences taken together will allow the trained mind to make classifications of real value.

There is nothing constant in nature and corrosive conditions are no exception so the changes that will take place during a year's operation may be taken as representative of the average corrosion activity unless a decided change is made in operating conditions.

Deductions from the above statements will be that the resistance to corrosion of a material in service must be of a general nature or at least the material must be resistant to a considerable variation in the corrosion factors. This is a pertinent argument against the use of too much time and expense on trying to obtain great accuracy. It is also one principal reason why steel is still adhered to in general construction; steel is the lowest priced and most familiar alloy therefore the cheapest and easiest to replace.

Use of Small Samples

Inspection of small samples will develop an interesting picture of the variation in corrosive effect throughout the testing period if handled in a practical way. These samples may be accurately measured, weighed and examined microscopically to determine the actual solution of material, the thickness and structure of scale, and the intercrystaler effect at regular stages in the corrosion period. These results compared with data taken of the service conditions will furnish a scientific background from which tabulations can be made showing the practical value classification of each metal.

The sample test may be made sufficiently law abiding to give indications exact enough for practical purposes and for comparison with other tests.

Directions recommended for making sample tests are here presented:

Select materials that can be conveniently manufactured and that can be used conveniently in the service under consideration. The specific gravity of the metal under test must be known. A check sample of steel or other metal commonly used should always be employed.

1. Clean surface of all scale and foreign material.
2. Measure all exposed surface accurately in square centimeters.
3. Weigh to fourth decimal point in grams.
4. Suspend or support in corrosive medium at a point where the corrosive action will be as near as possible to that of actual service.
5. Insulate samples electrically and maintain a clear spacing of 1 inch.
6. Remove samples periodically (once a month) wash off mud, oil and loosely adhering corrosion products using as little force as possible. Dry quickly.
7. When dry weigh carefully and examine for pits and scale.
8. Replace in test.
9. Final weighing should be made after every trace of corrosion products has been removed.

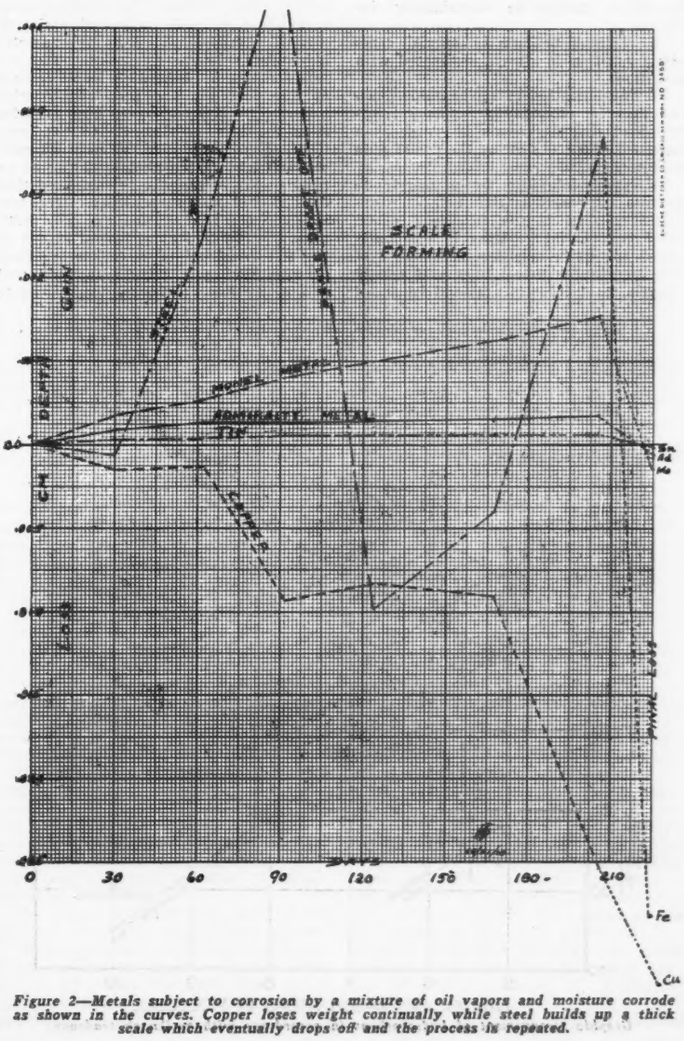

Figure 2—Metals subject to corrosion by a mixture of oil vapors and moisture corrode as shown in the curves. Copper loses weight continually while steel builds up a thick scale which eventually drops off and the process is repeated.

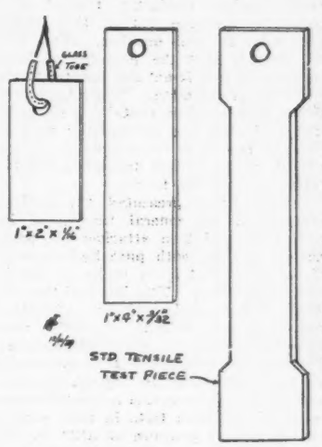

Figure 3—The size of test piece shown on the left will give the most accurate results but for tensile tests the piece should be at least 6" long and 1/8" thick.

Commenting on these directions, the first one insures testing of the material itself. It is well known that a surface skin of molecular thickness will give almost perfect protection against some types of corrosion if properly formed and this is a variable easily completely eliminated.

The second is for calculating the loss as is also the third. Test piece dimensions are of the greatest importance and have been much discussed. First requirements are for accuracy in weighing and if any reliance is to be obtained the weights must be accurate down to the smallest fraction. The corrosion loss per square centimeter of surface will be a definite amount and always the same under the same conditions regardless of the total weight of sample so, as it is the weight of corrosion loss we wish to record, it is essential that the ratio of total weight to weight loss be as small as possible. Weight loss has often been reported in percentage of total weight which is very misleading and erroneous on account of the practical inability to

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Relation of Gum to Antiknock Value

Petroleum Chemists Report Findings at Cincinnati Annual Meeting. Report on Research Phases of Other Practical Problems

By W. T. Ziegenhain

CINCINNATI, Ohio, Sept. 13. — It was quite evident at the meeting of the American Chemical Society here this week that chemistry is being more and more called upon to help solve the refiners' problems. The question of gum formation called for a liberal discussion at the meetings of the petroleum division and a paper written by D. T. Flood, J. W. Hladky and Graham Edgar of the Ethyl Gasoline Corp. added much to the findings on this subject presented previously.

It was pointed out that as the industry is called upon to produce gasolines of higher antiknock value by the use of various cracking processes it is automatically forcing itself deeper into the problem of gum formation. Vapor-phase cracking apparently is one logical answer to the question of producing motor fuels of a high antiknock value, but as a class, these gasolines contain or produce on standing many times the amount of gum that the ordinary straightrun gasoline of the past contained. With the trend in motor design distinctly toward still higher compression ratios, the refiner must solve the gum problem. Some take the attitude that the presence of large amounts of gum is not detrimental to the operation of the motor. Tests have been shown that gasoline containing 48 milligrams of gum was successfully used in airplane motors without causing an unusually heavy carbon formation on the valves or cylinder heads.

In the paper presented the authors summarized the general finding of investigators and then attacked the problem by working with pure hydrocarbons of the kind most likely to be present in cracked gasolines. This involved the synthesis of many hydrocarbons. After they were prepared, definite quantities were added to straightrun paraffinic gasoline. The resulting blends were then evaporated on the steam bath in copper porcelain and glass, and were also subjected to accelerated oxidation tests in pure oxygen at 100 pounds pressure at 212° F. In many cases storage tests at room temperature were carried out simultaneously. The results of these tests are not yet complete, but sufficient information has been secured to warrant preliminary conclusions.

Authors' Findings

The authors first outlined the general conclusions of previous investigators and then outlined their own findings. They said:

"1. It is the gum actually present in gasoline at the time of its use which gives trouble in automobiles because of clogged fuel induction systems, stuck inlet valves, etc.

"2. The tendency of gasoline to form gum in storage is best indicated by some form of oxidation test, and may or may not be indicated by the usual copper dish test.

"3. Gum formation is usually, if not invariably, associated with oxidation.

"4. Gum formation may be inhibited by adding to the gasoline small amounts of various substances, usually antioxidents.

"5. Gasolines may lose antiknock value on storage, apparently by formation of oxygenated compounds acting as knock inducers (or in some cases by actual removal, through gum formation, of hydrocarbons high in antiknock value), and the antiknock value may be partially or wholly restored by certain refinery treatment."

They summarized the conclusions based on their own experiments as follows:

"It is somewhat doubtful to what extent the data on pure hydrocarbons can be applied to commercial gasolines, since these can never be assumed to contain only an individual olefinic compound. Certain probable conclusions may, however, be suggested.

"1. The substances chiefly responsible for gum formation in gasolines are: Aliphatic diolefins; cyclic diolefins, and mono-or diolefins attached to a benzene ring. High concentrations of certain monolefins might be occasionally involved.

"2. Except perhaps in special cases gum formation is always associated with oxidation.

"3. Stabilization of an unstable gasoline may be effected by refinery treatment removing the classes of hydrocarbon discussed under (1), or by the use of gum inhibitors.

"4. Gum inhibitors seem merely to increase the length of time before an unstable gasoline begins to break down. Since commercial gasoline is frequently stored for quite considerable lengths of time (a year or more), it would appear essential that inhibitors should be added in sufficient quantity to stabilize the gasoline for periods of time well above the expected normal time of storage, if eventual gum formation is to be avoided.

"5. The copper dish evaporation test is unreliable as indicating stability.

"6. It seems probable that some type of oxidation test may give results correlating with average storage conditions. It would appear that a relation may be found between length of induction period and time of stability in storage. Gasolines may, however, be expected to show marked differences in the rate at which gum is formed after it once begins to be formed, some gasolines forming it more rapidly than others. Any complete oxidation test must involve both the determination of the induction period and the rate of gum formation after the induction period is over."

Temperature Effect on Cracking

Another paper of great interest to refiners and of considerable practical value in these days of cracking at very high temperatures was prepared by J. C. Geniesse and Raymond Reuter of the Atlantic Refining Co. The effect of time and temperature was studied with the use of a pyrex tube 30 millimeters outside diameter and 100 centimeters long, heated electrically by three combustion type hinge furnaces each 30 centimeters long.

The tube was packed with broken unglazed porcelain in order to reduce temperature fluctuations. Temperature measurements were made by inserting alumel-chromel thermocouples into 10-millimeter indentations in the glass wall. The hot junction was packed with a small amount of fine porcelain and then backed with asbestos to prevent direct heat transfer from the heating elements to the junction. Experiments made with thermocouples and thermometers inserted through the end of the tube showed that this method was satisfactory. The free space in the heated zone was 285 centimeters. The feed arrangement shown at the left consisted of a carburetor float chamber, a needle valve with sight feed and a vaporizer to insure vapor feed to the cracking tube. The charging stock was fed to the float bowl continuously by means of low pressure air. The cracked products passed through a condenser kept at 26.70° C., and a scrubber to remove the mist. The gas formed passed to drums displacing water which was drained through a pressure controlled valve. An equalizing line between the regulator and the line to the drum kept the pressure at the proper value. By this means the total fluctuation in pressure due to displacing water with gas was never greater than 6 millimeters of water. The success of the experiments depended very largely on close pressure control since feeding at a constant rate is impossible with variations in back pressure.

Another apparatus, used for low temperature, long time studies consisted of a bank of 90 pyrex tubes 25 millimeters inside diameter and 90 centimeters long connected in series. An annular space between asbestos boards surrounding the tubes and an outside casing served as an air channel. Resistance wires placed in the annular space furnished the heat. A motor and fan mounted at the base forced the heated air up between the tubes and down the outer space. A meker burner connected directly to the inside furnished inert gases so as to maintain the oxygen content of the gas within the apparatus at a safe limit and prevent an explosion in case a tube cracked. The tubes were not packed. The reaction volume was 40 liters. The same feed and receiving equipment were used as with the smaller apparatus.

Procedure Discussed

In discussing the procedure the authors said "the proper choice of a charging stock to be used in a study of this type involves a consideration of the amount of time available as well as the type of information wanted. The decomposition of pure hydrocarbons, such as n-hexadecane and n-hexadecene, undoubtedly offers a better opportunity to study the chemical reactions taking place than if a fraction of a given crude were taken. This is especially true if a great deal of analytical work is done on the products formed. In order to determine the effect of the chemical structure of the charging stock on the reaction taking place it would be necessary to prepare and crack large quantities of each of various types of hydrocarbons. In addition, if the information obtained on pure hydrocarbons is to be useful it would be necessary to determine the approximate chemical composition of the ordinary charge in order to predict the optimum cracking conditions. In view of the tremendous amount of research work involved in such a program, it was thought advisable to limit it to the study of a gas oil. A Mid-Continent paraffin base crude was used as the source of the gas oil because of the large quantity available to the industry. An additional point in favor of this type of charging stock is the fact that plant experience with low temperature cracking units has shown that all paraffin base oils have very nearly the same cracking characteristics. High temperature cracking should show less difference between them. The particular gas oil used was taken from Lisbon crude.

"Preparatory to making an experiment the apparatus was heated to approximately the correct temperature when gas oil was fed at a rate depending on the time of contact desired. The rheostats were then adjusted so as to obtain the correct temperature under operating conditions. Having obtained the correct operating conditions the volume of charging stock in the feed graduate and gas in the

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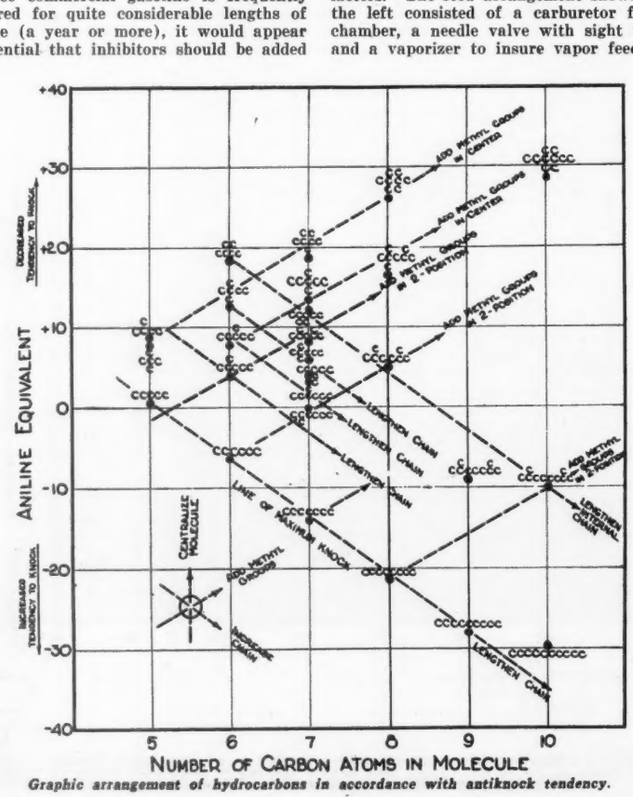
ELECT NEW OFFICERS

C. R. Wagner, chief chemist for the Pure Oil Co., was elected chairman of the petroleum division of the American Chemical Society for the coming year at its annual meeting in Cincinnati during the past week. Frank H. Hall of The Texas Company was named vice chairman and Charles D. Lowry, Jr., research chemist for the Universal Oil Products Co., was unanimously elected as secretary and treasurer. Dr. J. B. Hill, of the Atlantic Refining Co., who served as chairman of the division before Mr. Wagner's election was made a member of the executive committee. Dr. R. E. Wilson, of the Standard Oil Co. of Indiana, was also named a member of the executive committee.



Graphic arrangement of hydrocarbons in accordance with antiknock tendency.

J. R. Suman Has Picked a Queer Hobby

Humble Director Dreams of Developing a Generation of Petroleum Engineers Who Will Eliminate Waste and Slipshod Methods

By Thomas F. Smiley

Queer what hobbies men pick or stumble into, isn't it? It may be rare coins, striped socks, orphan asylums, poker, duck hunting—there's an endless and variegated train; some useful, some eccentric, some hard to classify. There's the case, for instance, of an oil company superintendent in Bradford, Pa., who used to drop into the St. James Hotel every evening at 8 o'clock, look over the register, make a round of the halls and then walk out. So far as known he never confided to anybody what pleasure or inspiration he derived from this daily rite; but it was his privately owned bug and in getting whatever fun there might have been in it he merely was exercising his right to life, liberty and the pursuit of happiness.

John R. Suman, director of the Humble Oil & Refining Co. and in charge of production in the company's northern division, has a strange hobby, to-wit, trying to develop a generation of engineers who will be able to take hold of petroleum production in the coming years and direct it along genuinely scientific lines. Talk with him 20 minutes and you are likely to discover that this subject of training young men for the production end of the oil business, and training them right, always is lying in the upper levels of his thought.

Fine hobby, isn't it? Purposeful, altruistic and all that. But if one may be allowed to interject a personal opinion, it's too ponderous ever to become highly popular. Something a little more light, airy and frivolous for us, please, if you have it.

"The future of the oil industry is in the hands of young men now in process of training, and it seems to me vital that this training be so correct and thorough that all wastefulness and all hit-or-miss methods will be eradicated absolutely and permanently," says Mr. Suman.

Implacable Hatred of Waste

Of course waste in the oil and gas industry has no open friends anywhere in these days, but Mr. Suman's hatred of it is peculiarly consuming and implacable. He not only has no patience with the practice of bringing unneeded crude to the surface to press still further upon storage facilities already overtaxed or with bungling, haphazard use of natural gas in the production of oil, but he grieves over the oil producer who needlessly employs careless workmen, uses antiquated or wornout equipment or employs methods known to be inefficient.

When one comes to know about the prodigious importance Mr. Suman attaches to scientific research in the problems of the oil field it is easier to understand his hobby concerning the technical training of young men for careers in the producing branch of the oil industry. And getting back to the bobby itself, it might be well to say a word here about the petroleum engineering department Mr. Suman has organized among employes of the Humble Oil & Refining Co., for it has provided him with a field laboratory for the application of his ideas concerning the training of petroleum engineers and executives of the future. Also it has had a crystallizing influence upon his hobby, converting it into a thing that hardly can be called a hobby any longer. In fact the hobby and the engineering department through which it is finding expression have become fused, the combined product being an exceedingly important adjunct to the company's activities.

Composed of Graduate Engineers

This petroleum engineering department is made up of graduates of engineering schools throughout the country. It began the year 1929 with 21 employes. It had 45 at the end of the year and now it has 70. From the company's main offices in Houston, Tex., a chief petroleum engineer and five senior engineers oversee the work of the department's five general divisions: Electrical, gas engineering, chemical engineering, equipment engineering and petroleum engineering service.

The electrical engineering division installs all equipment and supervises the installation of pumping units and prime movers on all wells in fields that have been electrified, such as Luling, Raccoon Bend and Sugarland. Individual wells are studied with a view of reducing power consumption.

The work of the gas engineering division is separated into four classes, accounting, repressuring and gas lift, dry gas work and gas testing. The most important work done by the chemical engineering group is in the treating of emulsions. In the equipment engineering division an analysis of all drilling and production equipment is carried on.

The petroleum engineering service keeps performance records on the various types of equipment used in the drilling and production departments. These records have brought about changes in operating methods and in the kinds of equipment used and have resulted in higher operating efficiency.

The young graduate engineers, fresh from the university, are employed at first on rotary drilling rigs, roustabout work in the production department and lease jobs of all kinds. They are urged to do experimental and research work on their own initiative and to keep themselves informed about new developments. As time passes each man's forte is likely to become clearer, with resultant tendency to specialize in certain kinds of production problems. Mr. Suman expects to see many of these young men advance to leading places in the petroleum engineering profession.

Could It Have Been Intentional?

All of Mr. Suman's adult life has been passed in the oil industry and among his earliest boyhood recollections are those of hours spent playing about the derrick floor. One incident when he was 8 years old he recalls with special clearness. A tooldresser dropped a tool wrench on the boy's left foot, severely injuring the great toe. A suspicion lingers that the dropping of that wrench was not strictly accidental and that its landing place was not wholly a matter of chance either. John did not play around that particular derrick thereafter, which seemed to be satisfactory to the toolie.

Mr. Suman was born in 1890 in Daleville, Ind., where his father, G. O. Suman, had natural gas interests. He attended high school for one year in that town and the next year in Muncie, Ind. Then the family moved to Los Angeles, Calif., where young John graduated from high school in 1908. Two years at the University of Southern California, Los Angeles, followed. In 1912 the young man graduated from the College of Mining of the University of California, Berkeley.

Although not goaded by financial need like most boys who seek vacation jobs, John always tried to find some profitable employment when not in school. Back in Daleville he worked as a delivery boy for a grocery. And at this period he had a sweetheart, a pretty red-haired girl whom he worshiped as only a 10-year-old boy can.

John didn't knock at the homes where he delivered goods. It wasn't correct form. The accepted procedure was to open the kitchen door, say hello to all and sundry in sight, deposit the grocery packages on the table and depart. Among the homes on his list one busy Saturday afternoon was that of the object of his boyish adoration. Whistling blithely, he trudged up the walk with his armful of bundles. As he threw the door open and burst into the kitchen he beheld a picture that stopped him with a jolt.

Probably Knocked After This

Now the Saturday bath was practiced with regularity by Daleville's citizenry. In most cases the old-fashioned wooden washtub was brought into service. As John halted wide-eyed on the threshold of the kitchen he beheld a girlish form, topped with a glory of red hair, just stepping from a washtub. A terrified scream, a rush to the refuge of an adjoining room and a bewildered, panic-stricken boy standing in the doorway. The rest is a blank to John. How he got back to the delivery wagon, whether he closed the kitchen door or left it open, what he did with the grocery packages—he doesn't know to this day.

In the summer vacation of 1911, his last before graduation from the university, John worked as assistant assayist for the Yellow Aster Mining & Milling Co. in Randsburg, Calif. His first job following his graduation in 1912 was that of assistant geologist for the Rio Bravo Oil Co., a subsidiary of the Southern Pacific Railroad, under E. T. Dumble, dean of Texas geologists. The next year he was made chief engineer. He remained with the company until 1917, when he became technical superintendent of the Roxana Petroleum Corp. in Texas and Louisiana. He returned to the Rio Bravo in 1919 as assistant manager, later assuming a similar position with the East Coast Oil Co. of Mexico, another Southern Pacific subsidiary. When the East Coast moved its headquarters to Tucson, Ariz., in 1923 Mr. Suman relinquished his office with that organization. In addition to his other work he was general superintendent for several years in Texas for the Associated Oil Co. of California, a Southern Pacific subsidiary, dropping this office when the Southern Pacific sold its oil holdings in California to the Standard Oil Co. of California and the Tidewater Oil Co.

Opportunity to Work Out Ideas

Mr. Suman joined the Humble Oil & Refining Co. in January, 1927. The northern division, in which he has charge of production, includes the company's West Texas, Central Texas, San Antonio, Wichita Falls, Amarillo, Cisco and New Mexico districts. Here he has made full use of the opportunity offered to work out methods of eliminating waste. Through his department of engineering problems in drilling and production practice, etc., are investigated. These investigations cover such subjects as suckerrods, belts, wire lines, pumping powers, crooked holes, feed-water heaters, oil-flow indicators, fishtail bits and so on. Reports on the investigations and of conclusions reached are made, and where changes in equipment or practice seem advisable they are put into effect, with corresponding improvement in results.

"To compete with foreign oil companies not a cent must be wasted in our own production methods," said Mr. Su-

(Continued on Page 76)

THIS THING BEGAN IN ADAM'S FAMILY

Starting way back with the Adam family while they were occupying the Eden apartments, there always have been persons who irritated their fellow men and made a mess of their own lives by brooding over the progress of others. Cain, you will recall, got so worked up over the apparent favor shown his brother Abel that, losing his self-restraint one day and violating those rules of courtesy that should be observed even inside the family circle, he smote Abel on the dome, killing him, thus creating a case for the criminal court before the population was big enough even to provide a jury.

John R. Suman

Sometimes the man who fails has nothing in the world to blame it on except the fact that he settled into a perpetual state of nervous concern over the successes of men about him, with the result that he never was able to give his own job the undivided application that would earn promotion and fatten his pay envelope.

The accompanying article is about a petroleum engineer who devotes time, thought and energy to a plan whose central purpose is to spur petroleum engineers associated with him to individual research work and high achievement.

"Don't be content to follow the worn paths," he tells them. "Cut fresh trails. Discover new methods or improve old ones. Be gloriously successful."

The engineers associated with him are picked men. May not their achievements some day overshadow those of their mentor himself? The thought disturbs him not at all. He just smiles and comments, "Nothing could please me more."

Standard of Indiana to Sell Tires

Complete Service to Be Available at Stations and Through Dealers. Several Standard Companies Join in Telegraph Service

Announcement by the Standard Oil Co. of Indiana that next month it would inaugurate the sale of tires at its stations throughout the Middle West and part of the Rocky Mountain territory and plans for the extension of telegraph facilities to motorists throughout the entire country through the establishment of offices at service stations were the developments of the past week in connection with the recent marketing trend in which station facilities are being enlarged to include the sale of commodities and services in addition to refined products.

The announcement of the Indiana Standard follows that of the Standard Oil Co. of New Jersey which last month completed plans to extend the sale and servicing of tires to include all the territory served by the parent company and its subsidiaries. The Standard of Indiana program means that starting about October 15 tires and tire service will be made available at 1,000 stations in 550 cities and towns in the states of Michigan, Indiana, Wisconsin, Illinois, Minnesota, Iowa, Missouri, North Dakota, South Dakota and Kansas. On a smaller scale the same plan will be carried out in Wyoming, Montana, Colorado and Oklahoma. Further distribution will be arranged by the Standard of Indiana as rapidly as possible through all the 8,200 controlled service stations and through the garages, stations and stores which are handling the company's products on a reseller basis.

Telegraph Service

The Standard Oil Co. of Indiana, Standard Oil Co. of New Jersey, Standard Oil Co. of Ohio and Standard Oil Co. of California, including their subsidiary companies, will be the medium through which the nation-wide telegraph service will be made available by the Postal Telegraph & Cable Corp.

The service will be inaugurated during the first week in October and will immediately increase the number of Postal offices throughout the United States to approximately 11,000 from 7,500 by adding 3,500 Standard Oil service stations to the list. A. H. Griswold, executive vice president of the company, who made the announcement, said the new departure in telegraph service has possibilities of eventually adding 35,000 to 40,000 stations to the Postal's list.

Indiana Tire Plan

A tire of first-line or first quality made by experienced manufacturing concerns will be handled by the Standard of Indiana. Prices will be adjusted to give them popular appeal. The usual tire accessories will be stocked along with casings and tubes.

Tires sold under the new plan will be guaranteed for 12 months for passenger car service and 6 months for commercial car service against breakdowns through accidents, blowouts, cuts, bruises, rim cuts, underinflation, wheels out of alignment, faulty brakes, or any other road hazards. In the event of a breakdown a tire will be repaired free of cost, or it will be replaced by a new tire for which the price will be one-twelfth or one-sixth of the usual price multiplied by the number of months the damaged tire was in service. This price system will assure 12 months' service for the cost of every passenger car tire and six months' service for every commercial tire.

Complete tire servicing will be started as rapidly as attendants can be trained for the work. This will be developed with the aim of saving the motorists all labor on tires. In connection with a sale the attendant or dealer or dealer's employe will put the tire on the customer's rim. Thereafter, repairs will be made whenever needed. If the customer has tire trouble he can get service at the nearest station or dealer and get the tire changed.

This service will be available at all times when the station is open, including Saturdays and Sundays and at night. In so far as possible repairs will be made at once, in much the same way that greasing is handled at present.

All repairs made within the life of the guarantee of the casing except on punctures will be free. For service after expiration of the guarantee period and for service on tires of other makes than those handled through the Standard of Indiana moderate charges will be made on a uniform scale and in conformity with a posted schedule. Free servicing with air

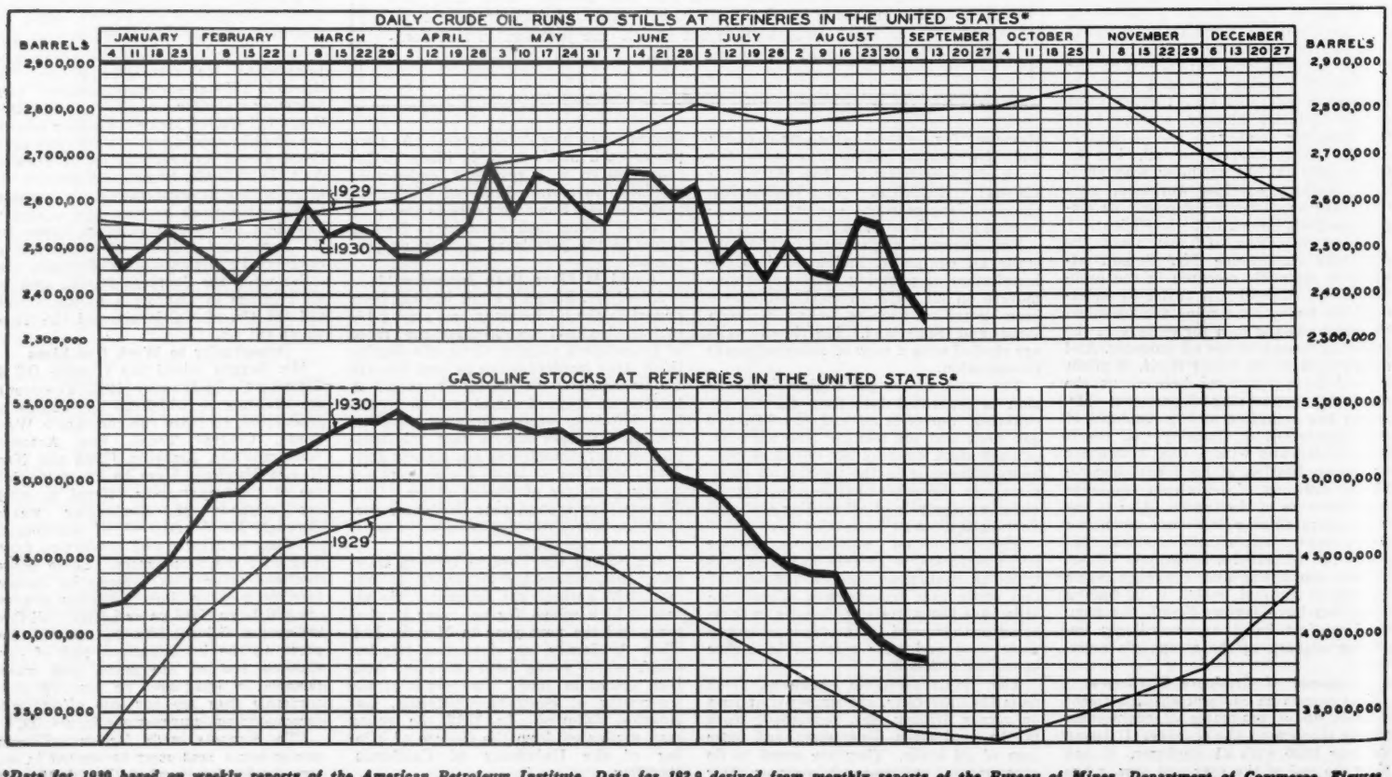
(Continued on Page 113)

AMERICAN PETROLEUM INSTITUTE WEEKLY REFINERY STATISTICS

The weekly report made to the American Petroleum Institute on refinery statistics—crude runs to stills, gasoline stocks and gas and fuel oil stocks in barrels—for the week ending September 13.

	Week ending September 13				Week ending September 6				Week ending January 4			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
East Coast	100.0	473,300	5,428,000	11,192,000	100.0	483,000	5,906,000	11,060,000	100.0	454,857	5,998,000	7,431,000
Appalachian	91 8	84,100	1,140,000	1,105,000	91.8	71,400	1,188,000	1,065,000	91.6	75,571	1,282,000	805,000
Indiana, Illinois, Kentucky	89.6	299,700	5,635,000	4,460,000	99.6	276,400	5,881,000	4,409,000	98.6	289,800	5,483,000	3,505,000
Oklahoma, Kansas, Missouri	89.3	269,600	2,553,000	4,828,000	89.3	249,300	2,691,000	4,806,000	87.7	263,428	3,604,000	3,277,000
Texas	90 4	570,600	5,674,000	10,662,000	90.4	519,000	6,025,000	10,199,000	90.7	539,857	6,590,000	13,757,000
Louisiana and Arkansas	96 8	155,400	1,308,000	2,006,000	96.8	161,400	1,191,000	2,036,000	96.8	160,000	2,161,000	4,499,000
Rocky Mountain	93 6	55,900	1,889,000	1,203,000	93.6	50,200	1,969,000	1,183,000	93.3	41,614	2,273,000	973,000
California	99.3	537,700	14,205,000	105,419,000	99.3	551,700	13,722,000	105,572,000	99.3	642,857	14,826,000	109,770,000
Total United States	95 6	2,446,300	37,832,000	140,875,000	95.6	2,362,400	38,573,000	140,330,000	95.4	2,468,285	42,217,000	144,017,000
Texas Gulf Coast	100.0	439,000	4,474,000	7,866,000	100.0	394,900	4,759,000	7,319,000	100.0	429,585	5,579,000	10,792,000
Louisiana Gulf Coast	100.0	108,400	1,003,000	1,274,000	100.0	119,400	822,000	1,314,000	100.0	108,514	1,877,000	3,818,000

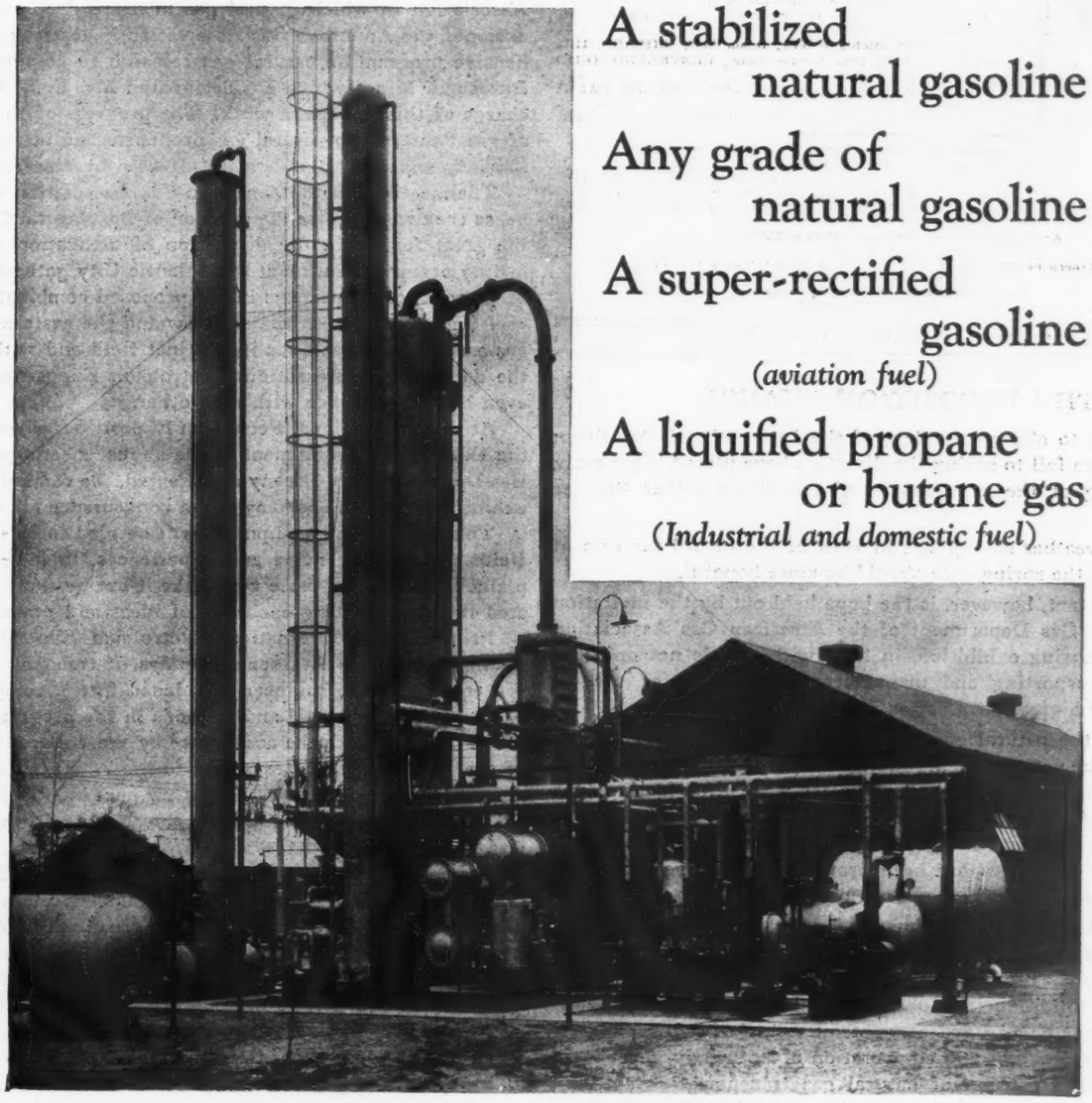
(1) Per cent of refinery capacity represented. (2) Daily crude runs to stills. (3) Gasoline stocks. (4) Gas and fuel oil stocks.



*Data for 1930 based on weekly reports of the American Petroleum Institute. Data for 1929 derived from monthly reports of the Bureau of Mines, Department of Commerce. Figures for last week not shown in graph but are included in above tables.

SOUTHWESTERN Rectifying Plants

FOR THE PRODUCTION OF



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(*Industrial and domestic fuel*)

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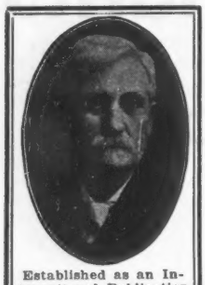

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THE EXPOSITION CHANGE

In deciding to change the date of the International Petroleum Exposition from fall to spring the directors have placed it properly at the opening of the main season of operations rather than at its close.

From the weather standpoint, in view of the record for rain at past oil shows, the spring date should be more hopeful.

More important, however, is the hope held out by the invitation to the Natural Gas Department of the American Gas Association that the first spring exhibition, in 1932, will include not only the producing, transporting and manufacturing divisions of the oil industry but the great natural gas division also.

Each year the natural gas and oil industries are finding more in common. The natural gas producer and the oil producer have had similar problems in the field and very often similar production. The development of the natural gasoline industry brought the gasoline manufacturer and the refiner together and more recently the bottled gas of the oil companies has been brought into competition with fuel oil on one hand and natural gas on the other.

The evolution of the gas lift with its varied problems engaged the attention of both oil and natural gas engineers and producers. The growing realization of the necessity for avoiding the waste of natural gas in oil-producing operations and of securing the fullest utilization of the energy and commercial values of natural gas required the co-ordination and co-operation of both industries.

Then in the expansion of natural gas transportation systems, opening remote markets to oil companies which had discovered gas fields for which there appeared to be no immediate outlet, the natural gas industry, like the natural gasoline industry, offered the oil producer opportunities for returns on his investment formerly unthought of.

The enterprise of the natural gas pipe line engineers in laying a network of transmission lines over the country no doubt had much to do with the decision of oil companies to perform similar feats in the construction of gasoline lines for the distribution of motor fuel by similar systems of transportation, no less ambitious.

The transportation divisions of both industries have been having their busiest years in marked contrast to the overproduction situation in oil and gasoline. Ultimately the effects of their labors will be reflected in wider markets and greater prosperity for both.

In short, the development of oil and natural gas has become one big industry in four main divisions, production, transportation, manufacturing and natural gas.

There are several practical reasons why this invitation to combine the Natural Gas Department meeting with the International Petroleum Exposition should be accepted.

The annual meetings of the American Gas Association are held each October at Atlantic City, the one place where there is sufficient accommodation for this great gathering of over 6,000 visitors. But natural gas men, desiring to attend this meeting have been perplexed by the holding of the International Petroleum Exposition around the same time. They have felt obliged to make a choice between one or the other because of the distances and the removal of this dilemma will be not the least of the advantages.

There are many matters at the meeting of the American Gas Association in which natural gas men are deeply interested. For example, the American Gas Association is entering upon a comprehensive program of natural gas research in co-operation with the Bureau of Mines which has designated Mr. E. L. Rawlins to take charge of this important work. The progress of this study will be of great interest to natural gas producers and ultimately to the oil industry which will be directly affected by research in utilization.

The meetings of the American Gas Association will continue to be, as they were before the creation of the Natural Gas Department, the great forum for the discussion of utilization problems which mainly occupy attention at the Atlantic City gatherings. There will be no conflict of interests in the proposed combination of the Natural Gas meeting with the oil show and the eastern meeting of the gas association. Each has its distinct field and with the change in the date of the International Petroleum Exposition there will be even less interference with each other.

At the International Petroleum Exposition, where 60 per cent of the exhibitors of equipment at the annual meetings of the Natural Gas Department are already represented, the combination of the two exhibits will be an economy and a convenience all around.

The users of this equipment will be glad to meet users in other fields, to compare notes and experiences, to have an exhibit explained not only by those who make it but by those who have operated it, with resulting exchange of ideas and practical benefit.

Primarily the International Petroleum Exposition was a producing exhibition with some displays of transportation and refinery equipment. It has been broadened into a complete exposition of oil industry material and methods in the program for this year's show. By 1932 with the acceptance by the Natural Gas Department of the invitation to be extended to the American Gas Association at its annual meeting in Atlantic City next month the Exposition in May of that year, coinciding with the annual meeting of the Natural Gas Department, and the addition of its exhibits, should for the first time represent every phase of the great oil and gas industry.

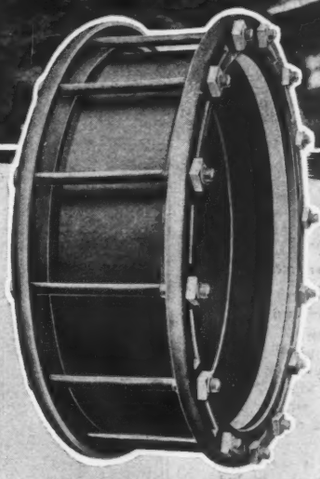
This would be the more fitting because the natural gas industry is centering more and more upon the great gas fields of the Southwest which are the basis for the immense investments being made in transmission systems to practically every metropolitan center.

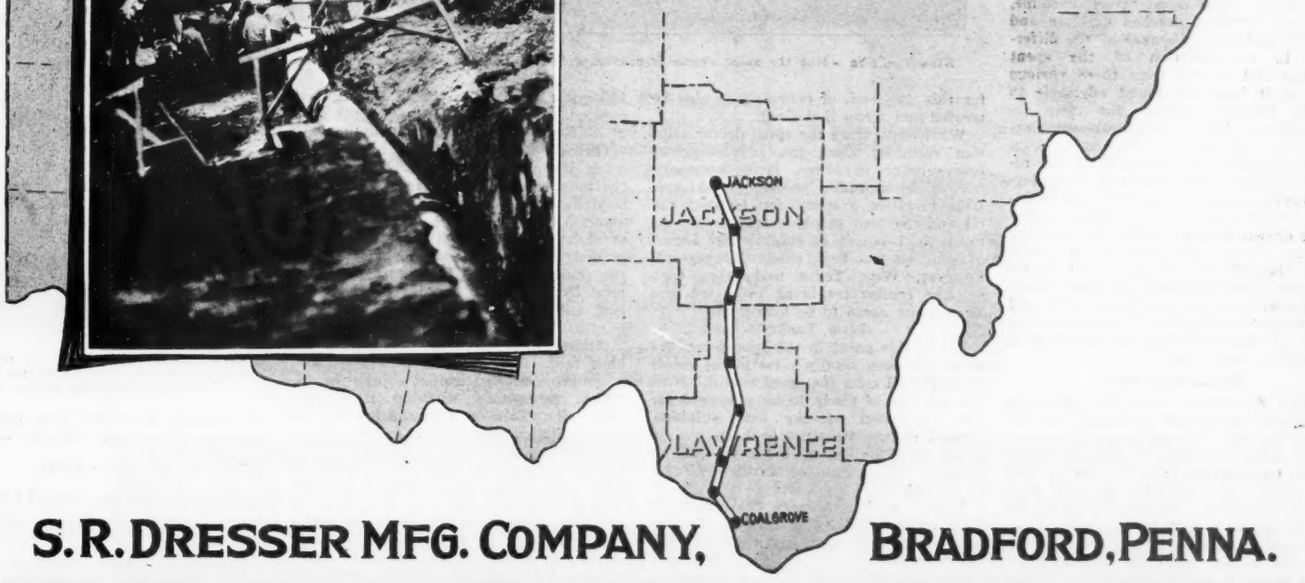
Tulsa, in the heart of the Mid-Continent, is also the natural rallying point for this natural gas development, discovered and being exploited by operations of the oil companies in these States.

Many natural gas men have made it a point to take in the International Petroleum Exposition every year and more would have been glad to do so if it had been possible with their other engagements. With the Natural Gas Department meeting held during the Exposition they will save time and have the advantages of both meetings combined and enlarged, while those who desire to attend the Atlantic City meeting will have no conflicting dates.

The advantages are so obvious that there can be little doubt of the attitude of natural gas producers towards the invitation from the directors of the Petroleum Exposition. So certain does it appear, that the Exposition directors have postponed the Exposition that would have been held next year until May of the following year. This will provide time for full arrangements for the combined exhibition and should assure a show of unequalled magnitude and interest.

Southern Ohio Hills offer No Barrier to the Flexible Dresser Coupled Line





S. R. DRESSER MFG. COMPANY, BRADFORD, PENNA.

DRESSER COUPLINGS DOMINATE

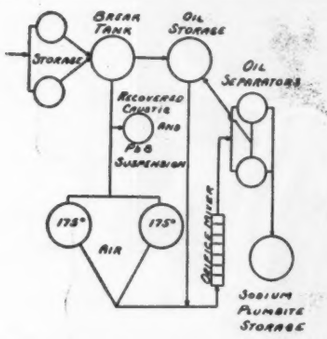
Recover 17,000 Pounds Litharge Daily

Simplicity, Low Cost of Operation and High Conversion Feature System at Atlantic Refining Co. Plant

By W. T. Ziegenhain

Simplicity, low cost of operation and the comparatively small investment in equipment are features of the litharge recovery system at the Philadelphia plant of the Atlantic Refining Co.

The process is that described and claimed in United States Patent No. 1,667,500 issued April 24, 1928, to Dr. J. B. Hill and assigned to the Atlantic Refining Co. Approximately 17,000 pounds of litharge are recovered daily with from 50,000 to 55,000 pounds of 16 gravity caustic solution. The spent doctor solution entering the system has an average litharge content of 0.6 per cent.



Simple flow chart showing manner of processing the spent doctor solution.

This is increased to 4 to 5 per cent before it leaves the system to be reused.

General Operation

In several respects the equipment and method of operation is conventional but changes have been effected since its installation four years ago, which have made its present operation a simple routine.

The spent doctor solution is segregated into two 1,700-bbl. storage tanks, including sludge from straightrun gasoline, pressure distillate, cracked gasoline and special naphthas. Because of the difference in concentration of the spent litharge and caustic from these various sources, it has been found advisable to supply adequate storage for their accumulation. This permits an equalization over a period with the result that a rather constant mixture goes to the recovery system. The service of these storage tanks alternates, so, while one is being filled, the other is settling, the latter being drawn from to supply the recovery system. In these tanks there is a partial separation of light oil and spent doctor solution. Approximately 300 bbls. of oil are recovered daily from these tanks and this is sent to finished storage depending upon its characteristics as shown by a laboratory inspection.

Breakdown Tank

From the storage tank the sludge is withdrawn as needed to supply the recovery system. The first step in the recovery of the litharge is to heat it slowly to the temperature at which the oil and the sludge will separate. This is done in an insulated, cone-bottom tank, 15 feet in diameter and 18 feet high above the cone. The tank is charged and the contents heated by closed steam coils. Open steam is sometimes used to hasten the heating but care must be taken not to raise the temperature too rapidly or foaming will result. At the required temperature, usually between 125° F. and 150° F., the separation of the suspension of lead sulphide in caustic and the oil occurs quickly. The suspension is withdrawn from the bottom and run to an intermediate tank, from which it is withdrawn in slugs of 130 bbls. each, as charges to the blow-tanks.

After the suspension has been removed to the oil level, the oil is run to storage. Approximately 160 bbls. of oil are recovered here daily. This is segregated and later used to wash the plumbite solution. Although this oil contains a high percentage of dissolved sulphur, it is suitable for this use, and, of course, may also be treated and rerun if desired.

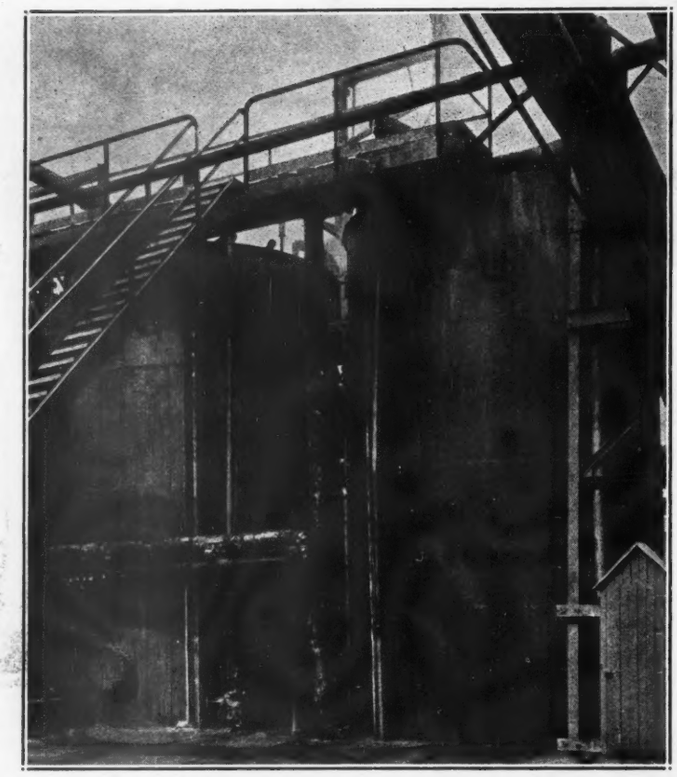
When separating the spent doctor solution resulting from the sweetening of low sulphur naphthas, it is necessary during the steaming process to add sulphur to effect a separation between the oil and the lead sulphide suspension. As much as 1 pound of sulphur per barrel of solution has been used. At present, however, West Texas and other high sulphur crudes are being processed and no sulphur needs to be added.

Blow Tanks

Up to this point in the processing, the work has been simply a matter of recovering the oil from the spent doctor. Now the solution is ready to be processed for the conversion of the lead sulphide, formed during treating, back to sodium plumbite by oxidation in the presence of caustic. This is done in two 15'x24' blow tanks.

These tanks operate continuously. They have a capacity of 640 bbls. (50 gallons per barrel) each, but are filled only to the 18-foot mark or with 475 bbls. Three sets of closed steam coils around the side and near the bottom of each tank maintain a temperature of 175° F. in the solution.

Air is blown continuously through the solution, and is distributed by a cross header, resting on the bottom of the tank. Branches from this header extend out to the sides of the tank, and are spaced 8 inches apart. One-inch and three-fourths inch lines are used, as the cross members and all pipes are perforated every 4 to 6 inches with three-sixteenths inch holes. The supply header extends across the center of the tank bottom and is supplied from both ends to form a loop. This permits a better distribution of air. The volume of air blown through these tanks approximates 115 cubic feet per pound of litharge recovered, or about 2,000,000 feet per day.



Blow tanks in which the spent doctor is converted back to sodium plumbite by air.

Remove Only Part of Batch

Instead of emptying the blow tanks when the charge shows it has reached the maximum degree of recovery, it has been found good practice to remove only about 5 feet of solution from each tank, or about 28 per cent of the volume. This is done every eight hours, after which the tanks are again filled to the 18-foot level by adding an equal volume of the lead sulphide suspension.

Wash Plumbite Solution

Although the solution coming from the blow tanks is sufficiently strong for use, it contains colored bodies, soluble in oil, which necessitate washing thoroughly with oil. This is accomplished in an orifice plate mixer, shown in the accompanying picture. The mixer was made by assembling five 18-inch lengths of 12-inch pipe, with orifice plates between each section.

These plates are blank except for a 3-inch hole in each, and the holes are staggered, one above the other, to cause a more thorough mix, as the recovered plumbite solution and oil are pumped through. The plumbite solution and the oil enter through a common inlet at the bottom, and flow upward. From the top of the mixer, they go to two 6½'x15' horizontal separators. The oil is recovered, and returned to the oil storage tanks or rerun, depending upon the degrees to which it is staurated with the coloring matter.

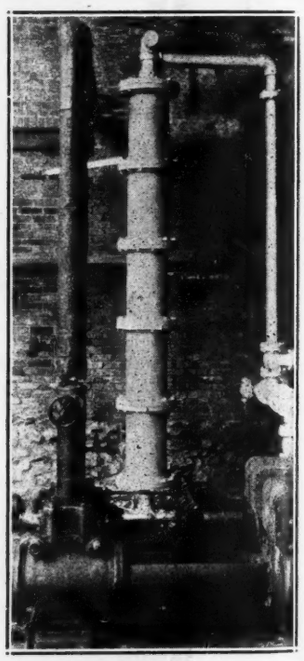
Enough oil is recovered from the break tank to effectively wash the recovered plumbite solution, and as it is recovered, an equal volume of the used oil is taken from the system and rerun. This oil is in reality a light naphtha since it is simply a portion of the gasoline or distillate remaining in the sludge from the previous treats. This oil has an endpoint below 450 and is used as a wash in the proportion of one part of naphtha to two parts of solution.

Add Fresh Caustic

As the wash solution is recovered, it is segregated in a storage tank, ready to be used again. Analyses of the stored solution are made periodically, and any deficiency of caustic is made up with new caustic, before it is sent to the treaters.

Small waste results from the system although it becomes necessary from time to time to dump portions of the solution. This is done whenever the concentration of the sodium thiosulphate exceeds 20 per cent. The portion to be dumped is generally used as a neutralizing wash so the actual waste is small.

The cause for the gradual accumulation of the material may better be explained by tabulating the reactions which



Orifice plate mixer used to wash the plumbite solution with oil, to free it of oil soluble coloring matter.

are thought to take place during the blowing of the spent solution with air.

$$4PbS + 2(O_2) \rightarrow 4S + 4PbO \quad (1)$$

$$6NaOH + 4S \rightarrow Na_2S_2O_3 + 2Na_2S + 3H_2O \quad (2)$$

$$2H_2O + 2Na_2S + 2PbO \rightarrow 2PbS + 4NaOH \quad (3)$$

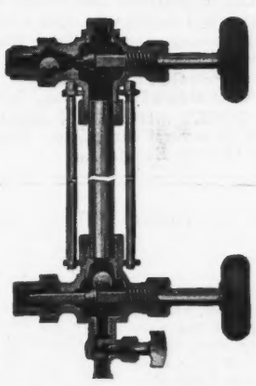
Simplifying these reactions into a composite equation, the following results:

$$2PbS + 2(O_2) + 2NaOH \rightarrow 2PbO + Na_2S_2O_3 + H_2O \quad (4)$$

Thus, in equation (4) the $Na_2S_2O_3$ is shown as one of the products of the reactions. This material does not enter into the subsequent reaction but accumulates. The PbO of equation (4) redissolves and unites with the excess

(Continued on Page 150)

The LEADERSHIP of PENBERTHY PRODUCTS



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PRICE CHANGES IN CALIFORNIA AND THEIR EFFECT ON SITUATION

By L. P. Stockman

LOS ANGELES, Calif., Sept. 15.—The most important development in California this week was a reduction in crude oil prices and a 1-cent increase in gasoline. Both changes instituted by the Standard Oil Co. of California effective September 15 were subsequently met by other major companies and most independent refiners.

The effect which this downward revision in crude oil prices will have on curtailment work is problematical and while it is the consensus that it should not change the outlook so far as existing curtailment is concerned it might seriously impair the effectiveness of any additional curtailment which will be necessary if state production of crude oil is to be reduced to 550,000 bbls. per day. It should be remembered in this connection, however, that present prices are still in excess of those existing previous to the increase of March 11, 1930, the last price change preceding this new cut and also that any relaxation in curtailment work may bring about substantial reductions.

No change was made by the Standard in the price of California crude oil below 24 degrees as it was felt that this grade of crude was not particularly affected. It is also significant to note that no change was made in crude oil price schedules for either Elwood or Kettleman Hills as both were previously lower than the prices paid for similar oil in other fields. Another interesting feature in connection with this new cut is that the top price in every field was reduced exactly 12 cents per barrel although in some areas the intervening reductions were irregular. The price schedules covering Rosecrans and Dominguez were also brought into line with other fields replacing the irregularity which existed under the preceding schedule as the superior grade of crude oil produced in these fields was commanding less money than similar grades of crude oil at Long Beach. Under the new schedule crude oil produced at Rosecrans and Dominguez is either equal to or exceeds quotations for corresponding crude oil at Long Beach, Santa Fe Springs, or other major fields.

OIL MAN'S CALENDAR

SEPTEMBER

17-19—Atlantic City, N. J., National Petroleum Association, Hotel Traymore.

29-Oct. 4—Pittsburgh, Pa., Petroleum Section, National Safety Council.

OCTOBER

2—Tulsa, Okla., General Committees, A.P.I. Division of Production and Marketing.

3—Tulsa, Okla., General Committee, A. P. I. Division of Refining.

3—Tulsa, Okla., Board of Directors, American Petroleum Institute, Mayo Hotel.

4-11—Tulsa, Okla., International Petroleum Exposition and Congress.

6-8—Tulsa, Okla., National Petroleum meeting, American Society of Mechanical Engineers.

6-11—Washington, D. C., sixth International Road Congress.

6-11—Washington, D. C., Exhibition, American Roadbuilders Association.

13-17—Atlantic City, N. J., American Gas Association, Auditorium.

14-16—Kansas City, Mo., Convention, Big Four State Jobbers.

16-25—London, England, Olympia Motor Show.

20-22—St. Louis, Mo., Petroleum Refiners division, National Association of Credit Men.

22-24—Pittsburgh, Pa., transportation meeting, Society of Automotive Engineers.

29-31—Lawrenceville, Kans., celebration twenty-fifth anniversary, Lawrence County Oil Industry.

NOVEMBER

2-5—St. Louis, Mo., Marketing Congress, Independent Oil Men of America, Statler Hotel.

6-11—Berlin, Germany, International Automobile Show.

10-13—Chicago, eleventh annual meeting, American Petroleum Institute, Stevens Hotel.

DECEMBER

1-5—Memphis, Tenn., ninth annual Asphalt Paving Conference, the Asphalt Institute and Association of Asphalt Paving Technologists.

JANUARY

3-10—New York, National Automobile Show.

24-31—Chicago, National Automobile Show.

NO OIL SHOW IN 1931; NEXT DURING MAY, 1932

Directors of the International Petroleum Exposition at a special meeting last week decided not to hold an exposition during 1931, and to hold the next oil show, following the one scheduled for October 4 to 11 of this year, in May, 1932. They also voted to extend an invitation to the Natural Gas Department of the American Gas Association to hold its annual spring meeting in Tulsa in May, 1932, in connection with the International Petroleum Exposition. The natural gas men are expected to act on this invitation during the annual convention of the American Gas Association to be held in Atlantic City from October 13 to 17 inclusive.

It is felt by the exposition directors it will be more desirable to hold the exposition in the spring, prior to the period of the year when the industry experiences its greatest activity, rather than in the fall after much of the field activity and developments had been curtailed by weather conditions. In other words, an exposition in the spring will give users of equipment an opportunity to view the latest devices before the big work of the year is started.

William G. Skelly, president of the exposition, announced that Col. P. J. Hurley, Secretary of War, had accepted an invitation to come to Tulsa to officially open the exposition on October 4.

High Spots in Field News

NORTH TEXAS AND PANHANDLE

Panhandle production cut 12,000 bbls. Archer County semiwildcat makes 50 bbls.

SOUTHWEST TEXAS

New producing spots indicated east of Beeville and in northwestern Duval County.

WEST TEXAS

Northern Ector County still holds attention. Unit plant proposed in Schleicher County.

EAST CENTRAL TEXAS

Think Rusk County well in Woodbine sand may open new pool. Van Pool extended east.

MISSISSIPPI

Mississippi gas well blows in, estimated 50,000,000 feet, thirteenth in Jackson district.

OKLAHOMA

New wildcat north of Oklahoma City Field increasing oil production and looks like pool opener.

CALIFORNIA

Discovery of new oil field in Weed patch area of Kern County. Big producer at Kettleman Hills.

KANSAS

Production up temporarily from taking potentials in Voshell and new wells in Eastborough. Oil in Stafford and Rooks Counties.

NORTH LOUISIANA-ARKANSAS

De Soto Parish well flowing steadily from Blossom sand in new area. Oil show in Pike County wildcat.

GULF COAST

Deep sand found on west side of Lost Lake. Refugio deep area widened.

ROCKY MOUNTAIN AREA

Hobbs Pool extended in several directions. Show of oil in Hot Springs, Wyo., test. Producer in Oregon Basin.

Late Fields

NORTH LOUISIANA

SHREVEPORT, La., Sept. 16.—Third successful test in the Sugar Creek district of Claiborne Parish, Triangle Drilling Co. and others' No. 1 Hodges and others, NW SW, Section 6-19-5, is in with an estimated 35,000,000 feet of gas, total depth 4,330 feet. Location is approximately 1¼ miles northwest of No. 1 Kilpatrick which made 10 bbls. oil and 1,000,000 feet of gas from 4,540 feet after testing 1,000,000 feet of gas at around 4,300 feet, and three-fourths mile northwest of No. 2 Caskey which made 19,000,000 feet of gas at 4,339 feet. Gas from two previous wells averaged 750 to 1,000 gallons per 1,000,000 feet and if No. 1 Hodges' production tests in line Triangle and associated companies will probably build a gasoline plant and pipe line.

Production in the north extension of Zwolle was stretched approximately a half mile west by Lacey Petroleum Co.'s No. 1 Tatum, SW NE, Section 26-8-12, Sabine Parish, which started heading Saturday and Monday was hooked into Standard Pipe Line Co.'s 4-inch gathering system which arn 350 bbls. first 24 hours. Total depth is 2,427 feet in top of the chalk and nearest production is Tarver and others' No. 3 Sabine State Bank, completed at 2,426 feet flowing 1,000 bbls. pinched in.

OKLAHOMA

Hall & Briscoe's No. 5 Holmes, SE cor. NW SE Section 10-11-3w, on the west side of the Oklahoma City Pool, is believed to be the largest well ever completed in Oklahoma. It made 3,712 bbls. the first hour and 20 minutes, or at the rate of 66,816 bbls. in 24 hours. The well was first completed about a week ago but it was forced to shut in for another separator and additional tankage. The well is believed to be producing from the Wilcox sand at a total depth of 6,540 feet, with about 175 feet of open hole. It flowed 1,344 bbls. the first half hour and 1,440 bbls. the next half hour. The gas was estimated at 40,000,000 feet. The previous largest well completed in Oklahoma was the Indian Territory Illuminating Oil Co.'s No. 1 Thomas Fuzzell, in Section 13-11-3w, which was completed November 5, 1929, for 43,557 bbls. the first 24 hours. The Thomas Fuzzell well found its production in the Silicious lime. Several other companies are interested in the lease with Hall & Briscoe. They are the British-American Oil Co., Producers Oil Co. and Indian Territory Illuminating Oil Co.

Some time ago it was reported that Kessler Oil & Gas Co. purchased an interest in all of Hall & Briscoe's properties in the Oklahoma City Field including the Holmes lease.

Production from the Oklahoma City Pool on September 16 was 112,541 bbls. from 63 wells out of a total of 530 wells completed in the pool.

The wildcat test of the Mid-Kansas Oil & Gas Co. and Ramsey Petroleum Co.'s No. 1 Messer, SW cor. Section 32-14-3w, west of Edmond, in Oklahoma County, was drilled to a total depth of 6,771 feet, where it made 456 bbls. of oil in 17 hours on the gauge of September 16. The well is believed to be producing from the Wilcox sand, which was topped at 6,696 feet. The operators may shoot the test before drilling it deeper.

In the extreme south end of the field, in Cleveland County, the Prairie Oil & Gas Co.'s No. 1 Reynolds, NE cor. SE NW Section 6-10-2w, will be abandoned at a total depth of 5,615 feet. The test was drilled to this depth without finding a showing of oil or gas and is believed to be too far south to find commercial production.

KANSAS

Production was extended a half mile north in the Eastborough Pool, in Sedgwick County, Kansas, by a new well with an estimated production of 600 bbls. a day. The well was National Refining Co. and others' No. 1 Murdock, SW cor. SE SE, Section 18-27-2. It was making 25 bbls.

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SUMAN YATES CHAIRMAN

John R. Suman, vice president and director of the Humble Oil & Refining Co., Houston, Tex., has been chosen as chairman of the Yates Pool Advisory Committee to fill the place made vacant by the transfer of Warner Clark of the California Co., Dallas, Tex., to the Standard Oil Co. of California's offices at San Francisco. R. H. Morrison, who will take the place of Mr. Clark at Dallas with the California Co., has been elected to the advisory committee of the Yates Pool. Mr. Clark was also chairman of the Hobbs Pool Advisory Committee, and a meeting will be held at Roswell, N. Mex., September 16 to appoint another head of that committee.

SCORE SHEET ON OIL PRODUCTION

Below is shown allotted average daily production in the United States, April to December, inclusive, suggested by the Committee on Economics of the Federal Oil Conservation Board, and the actual daily average production during the week ending September 13:

	Allotted (bbls.)	Actual (bbls.)	Over (bbls.)	Under (bbls.)
California	610,000	609,000	.....	1,000
Oklahoma	655,000	548,705	.....	106,295
Texas	750,000	793,989	43,989	..
Other fields	480,000	465,313	.....	14,687
Total	2,495,000	2,417,007	43,989	121,982

Net underproduction 77,993 bbls. per day.

Oklahoma Cuts Crude Output Deeper

Averaged 548,300 Bbls. a Day in Past Week. Possibility of New Pool in Oklahoma County. Caddo Curtailed

By W. A. Spinney
Staff Correspondent, Oklahoma Fields

The State's production in the past week again fell below the 550,000-bbl. mark, which was the amount estimated to meet refinery requirements during the month of September. The daily average for the State was approximately 548,300 bbls. for the week ending September 13, a net decline of over 16,000 bbls. a day from the previous week. The State is estimated to have a potential of better than 1,000,000 bbls. a day, all of which indicates that the conservation plan is working smoothly in all the flush fields in the State.

The most important new producing area in the State is north of the Oklahoma City Field where the wildcat well of the Mid-Kansas Oil & Gas Co. and Ramsey Oil Co. was flowing 457 bbls. a day on the last gauge from the Wilcox sand. It is believed the well may have opened a new Wilcox sand pool. It is the only wildcat well to date to find commercial production in the Wilcox sand in Oklahoma County outside of the main Oklahoma City Pool. The total depth of the well was 6,766 feet, nearly a 100 feet in the Wilcox sand. The well is No. 1 Messer, SW cor., Section 32-14-3w, in one hour making 45 bbls. The gas is estimated at 3,000,000 feet, and there is no water. It will be drilled a few feet deeper at a time. The well had been making 10 bbls. from the Wilcox until it reached a total depth of 6,757 feet, where the oil increased.

In the Tatums Pool

Drilling operations in the Tatums Pool in Carter County in the southern part of the State are being resumed as the result of several rains during the week and it is expected that the field will be in full operation within the next few days. The Magnolia Petroleum Co. which has about a dozen tests had the majority shut down for water.

An important completion during the week was Gant & Garvin's No. 1 Meeks, SW cor., Section 19-1s-2w, which extended production a quarter mile to the southeast when it swabbed 130 bbls. the first 24 hours. The operators experienced trouble with the liner and it is believed the well will make a better producer than indicated by its initial gauge. It is shut in in obedience to proration orders. The oil was found in a series of sands from 2,123-2,310 feet. Carter Oil Co.'s No. 1 J. Franklin, NE cor. NW NE, Section 24-1s-3w, on the east side of the field, swabbed and flowed 910 bbls. on its initial production test from broken sand at 2,063-2,165 feet.

Gant & Garvin's No. 1 Hooks, NE cor. NW NW, Section 30-1s-2w, is rigging up. It is the southeast offset to the same operators' producing well. Carter Oil Co. is moving in a derrick for No. 2 J. Franklin, SW cor. NE NE, Section 24-1s-3w, an offset to its new producer Vernon, Hale & Hudson's No. 1 Sonkine, north offset to Gant & Garvin's new producer, is spudding.

Notwithstanding the large overproduction of crude oil in the Mid-Continent fields leasing activity in various counties is continuing at a steady rate. In Stephens County leasers have been busy in Townships 3s-6w, 2s-6w, 2s-8w, 2s-7w and 2-7w.

Major County is another county in which leasing is fairly active. Recent transactions were in Townships 22-1w, 22-10w, 21-11w and 22-9w, on the east side of the county.

Curtailing in Caddo County

The Cement Field which has been yielding some large producing wells from the deep horizons the last several months is now being curtailed to meet the refinery requirements. Anderson-Prichard Oil Corp. has been running the oil in the Cement Field to its refinery at Cyril, and has the only pipe line outlet from the Cement Field. The company has instructed the operators in that area to hold down production on all wells below the 2,450-foot sand level to the amount the refinery desires to run each day. It is estimated the curtailment may amount to 50 per cent in some cases where the recent wells have been large producers. The same company about a month ago reduced the price of crude oil in the Cement area 25 cents a barrel on all oil produced from below the 2,450-foot level. The company announced it could not increase its refinery runs and that there was not enough storage available in the field.

Gauges on recently completed wells in the Cement Field were as follows: Magnolia Petroleum Co.'s No. 8 Niles, SW cor. NW NW, Section 36-6-10w, flowed 585 bbls. in 24 hours. Same company's No. 6 B. Lackey, NE cor. NW NW, Section 11-5-9w, flowed 375 bbls. Same company's No. 8 Lindsey, NE cor. NW SE, Section 36-6-10w, swabbed 89 bbls. from sand at 3,127-3,366 feet. No. 9 Lindsey swabbed 262 bbls. from the deep sand horizon. Same company's No. 3 S. Lackey, NW cor. NE NW, Section 5-5-9w, flowed 55 bbls. Other tests nearing the pay horizons were Magnolia Petroleum Co.'s No. 5 Hedlund, NW cor. NE, Section 11-5-9w, which was drilling at 3,978 feet; same company's No. 3 White, SW cor. SE, Section 25-6-10w, drilling at 2,975 feet; same company's No. 9 Niles, NE cor. NW, Section 36-6-10w, running tubing at 3,500 feet to test a showing of oil.

The deepest test in the Cement Field has been cemented and is shut down. Mid-Kansas Oil & Gas Co. and Ramsey Petroleum Co.'s No. 6 B. Lackey, NE cor. NW NW, Section 11-5-9w, had broken sand at 4,857-4,971 feet, with a showing of gas, and landed the casing at 4,857 feet.

On the east side of the Cement Field, the English Drilling Co.'s No. 1 Wagner, NE cor. NW SW, Section 12-5-9w, is shut down in sand at 3,213-28 feet, with a showing of oil and 5,000,000 feet of gas. Other tests nearing the pay horizon were the Rigney Oil Co.'s No. 3 Rigney, NE cor. NW SE, Section 12-5-9w. Nichols and others' No. 1 Rigney, SE cor. SW NW, Section 12-5-9w, was drilling the cement plugs at a total depth of 3,347 feet.

Oklahoma City

Recent transactions in the Oklahoma City field were as follows: Head Petroleum Co. announced the sale of its Bucher lease of one city block in the SE SW Section 1-11-3w, to the Great Southern Petroleum Corp. of Enid, Okla. Contract has been let for a derrick and drilling operations are expected to be started at once.

Leasing continues to be active in the north end of the Oklahoma City Field, where companies are securing protection in the area that has developed some large producing wells during the last few weeks.

Production was extended a quarter of a mile to the northeast in the south Oklahoma City Field by the completion of a well by Tom Slick Oil Co. The well was No. 1 Gleason, SE cor. NE NW Section 1-11-3w, on a small lease along the Frisco right of way. It made 262 bbls. the first hour and 3,303 bbls. the first 16 hours. The total depth of the well was 6,360 feet, in sand. The gas volume was estimated at 2,000,000 feet. The completion of the well will necessitate the drilling of several others offsetting it on account of a number of small tracts in the vicinity.

Two companies completed their last drilling operations in the south Oklahoma City Field during the week. Mid-Kansas Oil & Gas Co.'s No. 4 Mollman, NW cor. SE Section 23-11-3w, on the west side of the field, flowed 740 bbls. the first three hours with an estimated 7,000,000 feet of gas. The total depth of the well is 6,620 feet in sand. The other well was Coline Oil Co.'s No. 14 Clauer, NW cor. NE SE Section 25-11-3w, which was estimated to be a 1,000-bbl. well and 3,000,000 feet of gas from a total depth of 6,456 feet.

Two men were killed in the Oklahoma City Field when a high-pressure sand trap exploded at the Sinclair Oil & Gas Co. and Amerada Petroleum Corp.'s No. 3 Kinter, in NW cor. SW SE Section 30-11-2w. The men, Wilson Rushing and J. G. Harding, were Sinclair company employes and were opening the well to put it on production. The separators were demolished and the derrick was damaged considerably.

In Western Oklahoma

New development work has been resumed in the area west of Perry in Noble County. Magnolia Petroleum Co.'s No. 2 Weeder, NE cor. NW NW Section 22-21-2w, is expected to reach the deep pay horizon in a few days. It was drilling in shale at 4,500 feet. Same company's No. 1 Wollossen, SE cor. NE NE Section 21-21-2w, was drilling a new hole at 2,500 feet. The rig was skidded at a total depth of 3,450 feet. Continental Oil Co.'s No. 1 Lavington, SE cor. Section 32-21-1w, was spudding. Peerless Producing Co., Washoma Petroleum Co. and others' No. 1, NE cor. SE Section 22-22-1, in the Otoe Indian area, is still a location. The Magnolia Petroleum Co.'s No. 2 Young, NE cor. NW NW Section 22-21-2w, the discovery well in the area, is making 700 bbls. a day, pinched, from the Misener sand at 5,100-05 feet. The second well completed in the area was the same company's No. 4 Sams, SE cor. SW SW Section 15-21-2w, a north offset to the discovery well, is making 250 bbls. a day on the pump from the Misener sand at 5,185-95 feet. Twin States Oil & Gas Co.'s No. 1 Trussell, NE cor. SE Section 4-20-1w, is spudding.

The Woods County wildcat test of Sinclair Oil & Gas Co., the No. 1 Stewart, C SW SW Section 33-27-16w, is drilling towards the second Wilcox sand after finding a hole full of water in the upper Wilcox sand. It had a showing of oil at 7,137 feet. It was drilling in Green shale at 7,230 feet when last reported. Same company's No. 1 Howell, C SW SW Section 14-26-24w, Harper County, which was drilled to a total depth of 8,589 feet and then plugged back to 6,700 feet, was squibbed with 5 quarts of nitroglycerin at 5,300-40 feet. After the shot the well started making what is estimated to be 10,000,000 feet of the gas and has been shut in. The company has not fully determined where the gas is coming from. When the well is open it sprays a small amount of gasoline and water.

The only wildcat test now drilling in Harper County is the Empire Oil & Refining Co.'s No. 1 Bruce, C NE SW Section 12-25-20w, which has landed the 9-inch casing at 5,579 feet and was drilling deeper at 6,000 feet.

Gypsy Oil Co., Bu-Vi Bar Petroleum Corp. and others' No. 1 Thompson, SE cor. SW Section 1-25-15w, Woods County, is shut down at 6,104 feet, and will await the outcome of the other tests drilling in the northwestern part of the State.

All the wildcats in Woodward County are shut down. The deepest test is the Prairie Oil & Gas Co.'s No. 1 Wilbur, NE cor. NW Section 22-23-17w, which has reached a total depth of 7,445 feet, with nothing showing. It is the second hole the company has drilled, as the first was lost on account of a fishing job. The other two wildcat tests are shut down at less than 2,000 feet.

Big Gas in Wewoka Area

The gas sand south of the Wewoka Pool, along the county line between Seminole and Hughes Counties, has yielded some large gas wells and the supply was increased during the week by the completion of another gas well by Clark & Cowden's No. 1 Proctor, C SW NE, Section 11-7-8, which is estimated to be a 30,000,000-foot gas well. The gas sand was found at 2,880-2,943 feet, and the total depth is 3,024 feet. The gas began flowing when the crew finished drilling out the cement plug. The area may develop into a large gas producing field. Independent Oil & Gas Co.'s No. 2 Jackson, NE cor. SE SE, Section 17-7-8, had a showing of oil in sand at 3,063-70 feet, and is landing a liner. Mid-Continent Petroleum Corp.'s No. 1 Harjo, SW cor. NE SW, Section 20-7-8, had a show of oil and gas in sand from 2,852-62 feet, and was drilling deeper at 3,010 feet.

In the West Asher-Wanette area, the Payne Drilling Co. has announced a new location for a twin well to the discovery well in the area. The location is in the SE cor. NE, Section 22-6-3, Pottawatomie County. It is expected to test the shallow sands.

The Shell Petroleum Corp. and Indian Territory Illuminating Oil Co.'s location in Section 10-10-4, a wildcat in the northern part of Pottawatomie County, may not be drilled at this time. Work was started but it has been stopped. The location was staked and the tract cleared.

Wells Completed During Week

A total of 25 new wells were completed in the Oklahoma City Field during the week ending September 13. These new producers made an estimated initial pro-

(Continued on Page 75)

WILDCAT OPERATIONS IN OKLAHOMA

(Descriptions are East and North unless marked otherwise)

NORTHERN OKLAHOMA

ALFALFA COUNTY

Company, farm and location—	Remarks:
Smith Brothers' No. 1 Forbes, SE cor. NW NW Sec. 12-27-11w	Shut down 1,232 ft.
J. W. Bailey's No. 1 Acre, SW cor. NE Sec. 14-24-11w	Rigging up standard tools 4,660 ft.; cleaning out.

BECKHAM COUNTY

Ray Johnson and J. R. Cuniff's No. 1 Brower, C NW Sec. 29-10-22w	Shut down 3,784 ft.
Producers Exploration Co.'s No. 1 Sidell, SE cor. SW SW Sec. 17-9-22w	Shut down 2,402 ft.
Carson et al's No. 1 Danby, SW cor. SE NE Sec. 20-8-22w	Drlg. 1,606 ft.

BLAINE COUNTY

Washoma Oil Co. et al's No. 1 Phillips, C NW SW Sec. 13-19-10w	Shut down 3,730 ft.

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Kansas Production Up Temporarily

Taking Potentials in Voshell and New Wells in Eastborough Cause Increase. Oil in Stafford and Rooks Counties

By W. A. Spinney
Staff Correspondent, Kansas Fields

Kansas production shows a substantial increase for the week ending September 13. The daily average for the same seven days was approximately 118,200 bbls. The increase, amounting to 5,000 bbls. daily, was divided between the Voshell Pool in McPherson County, which was taking new potentials, and the Eastborough Pool in Sedgwick County, which had several new producers during the week.

A new well near Winfield in Cowley County was flowing at the rate of 1,000 bbls. a day. Roth & Faurot's No. 1 Brandt, SW cor. NE Section 12-32-4, appeared good for 1,000 bbls. from the lower Kansas City lime at 2,571-74 feet. When the well first came in it flowed at the rate of 100 bbls. an hour and settled down to 50 bbls. an hour. It filled a 350-bbl. tank, the only one on the lease, in seven hours, then the flow was turned into the slush pit. The new well extends production in the Winfield district about a quarter mile to the northwest. Operators express the opinion the well was running high on structure and may produce from the Bartlesville and Simpson sands.

Prairie Pipe Line Co. has received the pipe for the new line from the Voshell Pool in McPherson County to the Schurr Pool in Rice, a distance of about 40 miles. It will give the Schurr Pool the only outlet for crude produced in the pool. Part of the 8-inch pipe has arrived on the location and it may be 90 days before the line is completed so that the wells in the Schurr Pool can be opened up for production. Ditching has been started and the construction work is expected to begin in a few weeks. The pool has been without any outlet for the oil since August 1, when the Independent Oil & Gas Co. announced it would discontinue taking crude oil from the pool. The pool has been curtailed to about 50 bbls. a day from each well, a total of 250 bbls. from the five wells. The oil was run from the Schurr Pool to a loading rack near Raymond, a distance of about 1½ miles.

Gasoline Plant Near Hugoton

The Argus Production Co. announced plans to erect a gasoline plant within 4 miles of Hugoton, in Stevens County, in the southwestern part of Kansas, in the center of the gas area in that part of the State. The construction on the plant will begin as soon as the company has title to the land. The cost of the new plant is expected to be $750,000.

The gasoline content of the natural gas in the area is estimated to run about 200 gallons to the 1,000,000 feet of gas. All the gasoline possible will be extracted from the gas before it is turned into the mains that will supply northern cities and towns with gas for fuel and heat.

The Argus Production Co. is expected to complete a successful drilling campaign about November 1, and it plans to have about 85 new completed gas wells in the Hugoton gas area with an estimated open flow of better than 300,000,000 feet of gas. The gas is believed to contain more heat units than gas found in the Borger and Amarillo, Tex., gas fields.

Production was extended to the Ritz Pool, in McPherson County, in a northeasterly direction when the Shell Petroleum Corp., Phillips Petroleum Co. and others' No. 1 Winn, NW cor. SW NW, Section 7-20-1w, found oil in the chat at 2,935-78 feet, where the flow was estimated at 250 bbls. a day, and about 2,000,000 feet of gas. The test is about three-quarters of a mile from the Shell Petroleum Corp.'s No. 1 Miller, a producer from the chat which had an initial production of better than 5,000 bbls. a day and now has a potential of 3,000 bbls. a day.

Showing in Rooks County

A wildcat test in the northwestern part of the State extends production into Rooks County, where a showing of oil was found. Kansas production was again extended west and north by the strike of Seeley, Boyston and Alyward's No. 1 Slivers, C NE, Section 21-8-19w, Rooks County. The test had a showing of oil at 3,165 feet and the second showing in the top of the Lansing lime at 3,200-06 feet, which was bailed and showed oil at the rate of 2 bbls. an hour. The well is estimated at 50 bbls. as it now stands. The test was a wildcat and is located north of any other oil production in the State. There are only a few other producing wells west of the new well. The nearest oil production is believed to be in the western part of Ellis County a considerable distance south. Before a production test can be made of the oil showing in the well the casing will be underreamed to approximately 3,100 feet to shut off a small amount of water found at 3,040 feet.

A wildcat test in Ellsworth County, Slick, Pryor & Lockhart and others' No. 1 Hecken, NW cor., Section 25-17-10w, which had 3,000,000 feet of gas at 2,495-2,500 feet, was later drilled deeper to 2,942 feet, where the casing was landed. The gas broke through after the hole had been loaded with 1,500 feet of mud and blew the entire load out of the hole. Pipe was being pulled to examine the shoe and it will be rerun. It is expected to be cemented after being rerun into the hole and it may be some time before the test is completed. The wildcat test of Atkinson and others, No. 1 Misak, SE cor., Section 25-24-6w, Harper County, is spudding. It is the only drilling operation in the district and is located on a block assembled by the Amerada Petroleum Corp. and Dixie Oil Co.

The wildcat test of Empire Oil & Refining Co. and Study & Turner's No. 1 Haury, NE cor. NW, Section 1-23-4w, Reno County, is still shut down at 3,320 feet where it is estimated to be making 5,000,000 feet of gas at 3,313-20 feet. It is believed the gas will be bradenheaded and the well drilled deeper to test the lower horizons for oil.

The Shell Petroleum Corp. has farmed out several of its leases in the past for test wells in different districts in the State. It has recently announced that it has made contracts with the Washoma Petroleum Co. to drill a test in the south half of Section 36-22-2w, near the Palmer Pool in Harvey County and that company has made a location in the C NW SW, Section 36-22-2w. Shell corporation has also made a contract with E. F. Jones to drill a test well in the E half NE, Section 35-22-2w, Harvey County, and it is expected that both tests will be started in the near future.

Another Marion County well was completed during the week. Phillips Petroleum Co. and others' No. 3 Riffel, NW cor., Section 14-17-4, in the northeast part of the county, is estimated to be a 250-bbl. well. The oil was found in the chat at 2,328-64 feet, where it rose 500 feet in the hole in 40 minutes. A swabbing test was to be made and it may be drilled deeper. The same company's No. 2 Riffel is still producing around 400 bbls. a day.

Oil in Stafford County

Extending production west into Stafford County the Mid-Kansas Exploration Co. has the first commercial well yet found in the county. The well, No. 36 Richardson, SE cor., Section 36-22-12w, found oil at 3,541-44 feet and the first two hours the oil rose 900 feet in the hole and after standing for 24 hours the hole filled up 3,100 feet with oil. The oil was tested and the gravity was found to be 42 degrees corrected. The well is located on a wildcat lease and in an entirely unproductive area. The nearest producing wells are located in the Schurr Pool in Rice County about 25 miles to the northeast. Several weeks ago the test had a showing of gas at 3,305-08 feet. Some express the opinion the well is located on the same folding as the Schurr Pool which is believed to be located on the Ellsworth Arch which runs in a northeasterly and southwesterly direction through Stafford and Rice Counties. It is attracting considerable attention and indicates the western part of the State may yield oil in various quantities from counties that are not now in the producing column. The crew were fighting a cave some distance off bottom and a swabbing test will be made when tankage is erected.

In Sedgwick County

Magnolia Petroleum Co. announced plans to start its second operation in the Eastborough Pool during the week on a lease it acquired through the merger with the White Eagle Oil & Refining Co. The location has been staked in the NW cor., Section 29-27-2, Sedgwick County, on the east side of the Eastborough Pool. If commercial production is found it will call for offsets by the Derby Oil Co. on the west, Dixie Oil Co. on the north and the Fisher & Lauck to the northwest.

After a long discussion among the geologists regarding the deep producing horizon in the Eastborough Pool which some have been calling the Wilcox sand has now been named Misener and Simpson sands. Geologists with major oil companies are now inclined to believe the deep pay horizon is the Misener and Simpson sands. Cuttings show the upper part of horizon to be sand that is believed to be the Misener sand. Cuttings from the bottom of the hole show the formation to be the Simpson sand and dolomite. Some express the opinion the second pay horizon corresponds to the pay found in wells in the Valley Center Pool, while most of the Eastborough Pool wells are producing from the chat horizon giving the pool three producing formations. It is now believed that the Vickers Petroleum Co.'s No. 1 Keys, in Section 30-27-2, the discovery deep sand producer found its production in the Misener sand and the other wells are believed to be producing from the Simpson sand.

Fisher & Lauck's No. 5 trustee, SW cor. SE SE, Section 19-27-2, Sedgwick County, in the Eastborough Pool, made 25 bbls. of oil from Simpson sand at 3,237-41 feet and was to be drilled deeper, in the hope of increasing its production. After being drilled 10 feet deeper it was to be given a production test. The south offset, Derby Oil Co.'s No. 1 Rimel, is swabbing 1,600 bbls. of oil a day.

The Syndicate Oil & Gas Co. and Six Forty Oil Co.'s No. 1 Braley Airport, SE cor. SW NW, Section 6-28-2, Sedgwick County, about 1½ miles south of the Eastborough Pool, was drilling deeper at 3,070 feet after finding the chat horizon early in the week. The showing of oil was in a lime above the chat. Some express the opinion the area surrounding the test on the Braley Airport may be a separate pool if commercial production is found. The chat was found at 3,038 feet and carried water. The test will be carried to the Misener and Simpson sand formations.

Barton County

Deep Rock Oil Corp. and Twin State Oil Co.'s No. 1 Purano, SW cor. NE, Section 4-16-11w, is a rig. The Prairie Oil & Gas Co.'s No. 1 Rude, SW cor., Section 11-16-13w, is dry and abandoned at 3,380 feet.

Butler County

Empire Oil & Refining Co.'s No. 102 Koogler, NE cor. SE, Section 20-26-5, has been completed for 100 bbls. in Silicious lime 2,534-49 feet.

Cowley County

Deal and others made location for No. 1 Brooks, NW cor. SW SE, Section 20-31-6. Pryor & Lockhart and Johnson's No. 1 Headley, SW cor., Section 20-31-6, has been completed for 100 bbls. in Silicious lime 2,856-2,935 feet. Pryor & Lockhart and Sutton's No. 1 Sitton, NW cor., Section 29-31-6, made 500 bbls. from Silicious lime 2,868-2,939 feet. Lewis Oil Co. and others' No. 1 Orr, NE cor., Section 30-31-6, has been completed for 400 bbls. in sand 2,884-2,963 feet. The Prairie Oil & Gas Co.'s No. 2 Countryman, NE cor. SE SW, Section 33-32-7, made 108 bbls. in 14 hours in sand 1,948-64 feet. McKnabb and others' No. 1-C Johnson, SE cor. SW NW, Section 28-33-3, produced 45 bbls. from sand 3,247-75 feet.

Ellis County

J. Brown and others' No. 1 Weddell, NE cor. NW, Section 12-15-16w, is a rig under construction. Byrens and others' No. 1 Fisher, C SE, Section 4-11-20w, has been abandoned at 950 feet.

Greenwood County

Empire Oil & Refining Co. is erecting the rig for No. 2 Wasson, NE cor. SE, Section 22-22-12. Shull Drilling Co. moved a machine in for No. 3 Allis, SE cor. NW, Section 17-24-13. Simmons and others' No. 3 Greenwood, NE cor. SE SW, Section 19-22-11, made 750 bbls. from sand 2,053-2,102 feet. Empire Oil & Refining Co.'s No. 3 Greenwood, NW cor. SW SE, Section 19-22-11, has been completed for 10 bbls. in sand 2,109-48

(Continued on Page 132)

WILDCAT OPERATIONS IN KANSAS

(Descriptions are East unless marked otherwise)

BARBER COUNTY

Company, farm and location—	Remarks:
Barbara Oil Co.'s No. 1 Hamblin, SW NW Sec. 24-33-13w.	Fishing 4,487-4,508 ft.; 20,000,000 ft. gas; swabbing casing.
Phillips Pet. Co.'s No. 1 Powell, SE cor. SE Sec. 11-32-10w	Drlg. 4,798 ft.

BARTON COUNTY

McCool et al's No. 1 Tsern, SW SE NE Sec. 12-20-11w.	Drlg. 530 ft.
Slick and Prairie's No. 1 Rude, SW cor. Sec. 11-16-13w.	Drlg. 3,376-78 ft.; water.

BUTLER COUNTY

National Ref. Co.'s No. 1 Settergren, NW cor. Sec. 32-26-4.	Drlg. 750 ft.
McCulloch and Empire's No. 1 Lilley, SW NW NW Sec. 23-23-5	Drlg. 350 ft.
Farrell et al's No. 1 Sutton, NW cor. Sec. 18-28-7	Drlg. 830 ft.
Gypsy Oil Co.'s No. 1 Osborne, NW SE Sec. 22-26-3	Drlg. 2,785 ft.
Joe Liggett's No. 1 Guanther, C SE NE NW Sec. 29-26-7.	Comp. 2,785-93 ft.; swab 65 bbls. oil and 35 bbls. water.

CHAUTAUQUA COUNTY

Leighty et al's No. 1 Carr, NW SE Sec. 5-33-9	Shut down 350 ft.

CLARK COUNTY

Watchorn's No. 3 Morrison, NW NE Sec. 20-32-21w	Drlg. 6,687 ft.

CLAY COUNTY

Crystal Oil et al's No. 1 Tivier, SW cor. Sec. 19-8-2	Shut down 1,810 ft.

(Continued on Page 175)

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HOUSTON FORT WORTH MIDLAND, TEXAS

De Soto Parish Well Flowing Steadily

Producing From the Blossom Sand in New Area. Oil Show in Pike County Wildcat. Mississippi Gas Well Blows In

By D. H. Bancroft
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., Sept. 15.—Pelham & Bundy apparently have a producer in No. 1 Rhodes, Section 32-13-14, De Soto Parish, at Grand Cane, 6 miles north of Mansfield and 10 miles southwest of Holly production. No well drilled in that part of De Soto during the past several years has made any show at all, but this one had an oil show in 15 feet of broken lime, 2,877-92 feet and with sand from 2,985-90 feet filled up 2,000 feet in oil and was being standardized when it started flowing Friday night estimated at 50 bbls. by heads. Saturday morning it was reported flowing steadily but there was no estimate on production. It is producing from the Blossom, total depth 3,009 feet.

Nothing further has been done with the town lot gas well brought in by Wallace, Riggs & Cunningham just outside the city limits on the west edge of Shreveport. Blowing in with an estimated 20,000,000 feet of gas from 1,988 feet while washing to bottom preparatory to going deeper, the well, No. 1 Cunningham, in the NE cor. NW Section 15-17-14, was shut in for a gauge which at last reports had not been taken. It was drilled originally by Manie Drilling Co. and abandoned as a dry hole in January, 1926. Popular attitude toward it seems to be limited to regarding it as an interesting phenomenon and so far there has been no news of the owners or anyone else showing any disposition to follow it up with new drilling. Caddo's other contribution to the week's developments was a 20-bbl. pumper, Bayou State Oil Corp.'s No. 3 Barr, Section 30-22-15, Hosston district, total depth 1,072 feet.

Dick Norton is reported to have sold his Rhodessa wildcat gasser, and acreage surrounding, to Louisiana Gas & Fuel Co. The well, No. 1 Hill, Section 33-23-16, was completed about a month ago, making around 12,000,000 feet of gas from 5,506 feet, and the new owners are supposed to have made locations for two more wells and have rig up on one, but descriptions are lacking. Meantime, Tex-La. Producing Co. has made location for No. 1 Wall in the SW NE of the discovery section for a similar deep Trinity test.

Deep Trinity Producer

Morgan and others' deep Trinity producer on the southwest flank of the Bellevue Dome in Bossier Parish, No. 2 Kendrick, Section 22-19-11, has not changed materially—300 bbls. oil and 500 bbls. salt water from 1,800 feet, but analyses of the water have failed to show definitely whether it is bottom water or from above through a bad seat or leaky string. No. 3 Kendrick, in the NE cor. SW same section, was dry on drill stem test at 1,772-86 feet and got 27 joints on another such test at 2,825-35 feet, which would make it appear that the water in No. 2 is bottom water. Autrey Oil Co.'s No. 1 McDade in Section 28-19-11 was dry in 2 feet of sand at 2,012 feet and is drilling around 2,150 feet. Triangle Drilling Co.'s wildcat, No. 1 Bollinger, in Section 36-23-13, begun as a Trinity test, cored sand at 3,300 feet but it didn't have anything in it.

The Texas Company's No. 1 Pine Woods Lumber Co., Section 25-23-12, Carterville district of Bossier, reported last week as abandoned after it cratered, wasn't abandoned. They killed the estimated 15,000,000 feet of gas that blew in from 2,672 feet and shut down the rig for orders. No. 4 Wilkinson in Section 36-23-12 is Carterville's deepest hole to date, including those wildcats drilled before the discovery well was brought in in 1926. At 3,650 feet it was drilling in the red beds of the Trinity, but so far hasn't shown anything since leaving the 2,900-3,100-foot pay streaks. O. L. Hickman abandoned No. 4 Bain, Section 31-23-11, as a dry hole at 3,160 feet and Magnolia Petroleum Co.'s No. 2 Matlock, Section 25-23-12, also was a failure.

Mississippi Tests

Gulf Refining Co.'s No. 1 Hartfield, Section 7-5-2e, Rankin County, Mississippi, blew in from 2 feet in the chalk, total depth 2,398 feet, with an estimated 50,000,000 feet of gas as the Jackson district's thirteenth producer which gives the field a total initial open flow of close to 300,000,000 feet per day. Ohio Oil Co.'s No. 1 School, Section 16-12-1e, Hinds County, has been abandoned as a dry hole at 2,518 feet.

Daily average runs from the field declined 545 bbls. from last week's figures, the runs from all districts totaling 93,395 bbls., of which 39,830 bbls. were from North Louisiana pools and 53,565 bbls. from Arkansas. Louisiana runs fell off 610 bbls. but an increase of 65 bbls. in Arkansas shaded it somewhat. Caddo light oil runs were off 280 bbls. and there was a decline of 165 bbls. in movement of heavy oil. Bellevue fell 220 bbls. and Zwolle 145 bbls. Haynesville runs increased 200 bbls. The daily average runs from the several pools were:

NORTH LOUISIANA	
Caddo, light	9,071
Caddo, heavy	2,585
Homer	3,445
Haynesville	4,950
DeSoto-Red River	3,090
Elm Grove	480
Bellevue	725
Cotton Valley	1,860
Urania	5,300
Pleasant Hill	515
Sarepta-Carterville	2,675
Zwolle	4,135
Holly	995
Total	39,830
Last week	40,440
Decrease	610
ARKANSAS	
El Dorado	4,030
Smackover, light	5,040
Smackover, heavy	36,725
Stephens	925
Nevada County	1,025
Lisbon	910
Champagnolle	3,765
Bradley	65
Mount Holly	80
Urbana	1,000
Total	53,565
Last week	53,500
Increase	65
Both states	93,395
Last week	93,940
Decrease	545

Caldwell Wildcat

Those interested in wildcatting between Urania (La Salle Parish) and the Richland gas field to the northeast are more than mildly interested in bullish reports coming from Hudson and others' No. 1 Burton in Section 35-12-2e, Caldwell Parish. The well—at Kelly—is reported to have made more or less of a show in the top of the Jackson at around 700 feet but it went on and is drilling around 1,500 feet. Urania production comes from this level but this particular wildcat is touted as considerably higher structurally than Urania. Geophysical surveys conducted last year by various interests showed a decided high and, figured against Richland gas and Urania oil sand levels, the "dope" is very much in this locality's favor. On the other hand, beyond a puff of gas and a small show of oil other tests drilled in this vicinity during the past few years have failed to reward the wildcatter.

While waiting for cement on 6⅝-inch at 1,414 feet to set on No. 1 Pittsfield plantation, Section 41-8-10, Concordia Parish, A. C. Glassell has made locations for two more wells north and west of this well on his 100,000-acre block. No. 1 Britton & Koontz is 6,000 feet south and 25 feet east, NW cor., Section 20-8-10, and No. 1 Pecania plantation is 25 feet south and 25 feet west, SE cor., Section 44-8-9. Triangle Drilling Co.'s No. 1 Hodges and others, in Section 6-19-5, Claiborne Parish, in anhydrite at 4,196 feet, is not very far from where it should begin coring for the pay that developed No. 2 Caskey, in the same section, as a 20,000,000-foot gasser at 4,339 feet and No. 1 Kilpatrick in Section 7-19-5, as a producer at 4,540 feet.

R. O. Roy abandoned his two wildcats on his block east of Kingston, DeSoto Parish, 8 or 10 miles northeast of Holly production. No. 1 Nelson, NW SW, Section 36-15-13, was dry at 2,700 feet, and No. 1 Wilson, NW NW, Section 35-15-13, at 1,960 feet. No. 2 Nelson is a location in the SE cor. SE, Section 35.

El Dorado Chief Oil & Gas Co. abandoned No. 1 Southern Advance Paper Co. in Section 35-15-4w, Jackson Parish, at 1,400 feet where it had been shut down for the past two or three months, and Arkansas Fuel Oil Co.'s No. 1 Lewis & Co., Section 36-20-4, Lincoln Parish, about 6 miles northeast of Triangle Drilling Co.'s two deep wells in the Sugar Creek district of Claiborne Parish, referred to above, was abandoned at 4,292 feet on account of salt water. W. M. Coats ran drill stem test at 2,304 feet on No. 1 Collins, Section 38-9-10, Natchitoches Parish, which turned out dry and is drilling below 2,400 feet. Cooper and others got the top of the chalk at 1,280 feet on No. 1 Cooper, Section 35-11-10, and were arranging to make a similar test of the first 10 feet of the formation.

Monroe-Richland

Three producers were completed in the

(Continued on Page 132)

LOUISIANA-ARKANSAS PROVEN AREAS

NORTH LOUISIANA
BOSSIER PARISH—BELLEVUE

Company, farm and location—	Remarks—
H. I. Morgan et al's No. 3 Kendricks, 1,120 ft. N, 1,120 ft. E, SW cor., Sec. 22-19-11	Began drlg. Sept. 1; cmtd. 10-in. 143 ft; drlg. 475 ft.

BOSSIER PARISH—CARTERVILLE

Del.-La. Dev. Co.'s No. 6 Bollinger, 330 ft. S, 220 ft. W, NW cor., Lot 17, in Lot 16, Sec. 31-23-11	Hole full oil; W.O.S.R; 15 ft. broken sand; T.D. 3,217 ft.
Greenwood Prod. Co.'s No. 2 Bollinger, 990 ft. W, 330 ft. S, NE cor. NE SE, Sec. 36-23-12	Cmtd. 6⅝-in. 3,138 ft; 5-ft. sand; W.O.S.R. 3,173 ft.
Palmer Corp.'s No. 2 Roberson, 330 ft. N, 330 ft. E, SW cor. NW NE, Sec. 26-23-12	Derrick.
The Texas Co.'s No. 1 Pine Woods Lbr. Co., 1,650 ft. S, 300 ft. E, NW cor., Sec. 25-23-12	Previously reported cratered and abd. at 2,672 ft; did not abd; gas flow killed; W.O.
The Texas Co.'s No. 2 Hy Rose, 965 ft. E, 425 ft. N. C, Sec. 31-23-11	O.W.D.D; began drlg. July 22; drlg. shale 3,147 ft; old T.D. 3,075 ft; cmtd. 4½-in. 3,148 ft; bailing to test; T.D. 3,174 ft.
The Texas Co.'s No. 14 Wilkinson, 990 ft. N, 990 ft. W, SE cor. SE NW, Sec. 36-23-12	Drlg. red beds 3,650 ft.
The Texas Co.'s No. 16 Wilkinson, 330 ft. N, 330 ft. E, SW NE, Sec. 36-23-12	Derrick.
Tippett Drlg. Co.'s No. 3 Holmes, 330 ft. N, 330 ft. E, SW cor. NE NW, Sec. 36-23-12	300 ft. oil in hole; waiting on power; T.D. 3,180 ft.
Woodley et al's No. 1 Roberson, 330 ft. N, 330 ft. W, SE cor. SW NE, Sec. 22-23-12	Surface csg. collapsed; W.O; T.D. 1,500 ft.

(Continued on Page 107)

WILDCAT OPERATIONS IN LOUISIANA-ARKANSAS

NORTH LOUISIANA
AVOYELLES PARISH

Company, farm and location—	Remarks—
Gas-Con Oil Corp.'s No. 1 Morrow (no check), Sec. 14-2s-4e	Rig up.
R. E. Tippett's No. 1 Chateline, NE NE, Sec. 34-1n-3e	Cored S.W. sand 3,140-47 ft; drlg. S.W. sand 3,400 ft; S.D. 3,410 ft.

BIENVILLE PARISH

Carter & Dobbs' No. 1 White, 330 ft. N, 330 ft. W, SE cor. SE SE, Sec. 9-18-6	Began drlg. Sept. 6; cmtd. 10-in. 100 ft; drlg. 300 ft.
W. A. Nichols et al's No. 1 McDermott, 660 ft. S, 660 ft. W, NE cor. NE NE, Sec. 28-18-6	D.S. test 2,281-2,358 ft; 1 fourble mud; 10 ft. oil; S.D. for csg.
S. P. Borden's No. 1 Thomas, 330 ft. S, 330 ft. E, NW cor., Sec. 27-16-9	Drlg. 2,387 ft.
Olds & Smith's No. 1 Brice, 330 ft. N, 330 ft. E, SW cor. SE SE, Sec. 15-18-6	Drlg. 1,110 ft.

BOSSIER PARISH

Andrews & Daveline's No. 1 Nattin, 100 ft. N, 250 ft. W, C, Sec. 15-22-14	S.D; W.O; 20 ft. broken sand; T.D. 1,501 ft.
Autrey Oil Co.'s No. 1 Johnson, 1,120 ft. N, 200 ft. E, SW cor. NW, Sec. 34-19-11	Began drlg. July 25; S.D. for fuel 60 ft.
Autrey Oil Co.'s No. 1 McDade, 200 ft. S, 200 ft. E, C, Sec. 28-19-11	D.S. test 2-ft. sand 2,010-12 ft; dry; drlg. 2,050 ft.
Triangle Drlg. Co.'s No. 1 Bollinger, C SE SE, Sec. 36-23-13	Coring sand 3,300 ft.

CADDO PARISH

L. B. Mawk's No. 1 Swann, 440 ft. N, 200 ft. E, SW cor., Sec. 23-21-14	S.D. for fuel; T.D. 700 ft.
Tex.-La. Prod. Co.'s No. 1 Wall, 2,715 ft. N, 1,980 ft. W, SE cor., Sec. 33-23-16	Location.

(Continued on Page 101)

Find Deep Sand West Side Lost Lake

Discovery Strengthens Confidence That More Prolific Production May Be Found. Widening Refugio Deep Area

By Neil Williams
Staff Correspondent, Gulf Coast Fields

HOUSTON, Tex., Sept. 15.—Chief among developments in the Gulf Coast Field operations the past week was the finding of a deep sand flanking the west side of the Lost Lake Dome, northern Chambers County. The new sand, which is in Pure Oil Co.'s No. 5 Lost Lake, has strengthened confidence of the operators that more prolific production is yet to be found than so far developed on top of the dome.

The Lost Lake test is in wildcat territory over a mile from the present production on the dome and over a quarter mile westward from the nearest test which has been drilled so far at that dome. It is in the middle of Lost Lake, from which the dome obtains its name. The sand was topped at 5,119 feet and late in the week was being cored at 5,226 feet. It is likely the hole will be carried a few feet deeper and a test taken.

Present production at Lost Lake is confined to a few wells within a small area on top of the dome and is from a horizon at approximately 2,800 feet. A number of tests in that area and surrounding the field have been carried below that level and have gone into cap rock and salt between 3,600 and 4,000 feet. No. 5 Lost Lake was drilled with a view toward getting off the dome and picking up a flank sand which might prove more favorable for development than the sands overlying the dome.

Lost Lake is a geophysically located dome which is controlled in its entirety by Pure Oil Co., which has conducted a steady development program since the discovery in 1927. First production was opened during 1929 and a series of producing wells has been completed but so far the field has not turned out anything of particular importance, and now is averaging only from 650 to 700 bbls. daily.

Other interest on the Gulf Coast was centered largely on the continued development of the deeper sands at Refugio and flanking the Barbers Hill Dome. The slackening of work at salt dome fields and prospects which has been going on due to efforts of operators to co-operate in reducing production continued to be felt. Production of coastal fields, however, for the week indicated no important change and stayed around 170,000 bbls. daily for Texas and 24,000 for south Louisiana. The total figures for the Texas coastal fields showed a decrease of 1,039 bbls. with a total decrease for the entire coastal area of 1,325 bbls.

Developments at Refugio

Developments at Refugio in the lower Gulf Coast territory were marked by a series of deep wells being completed. Although the majority of the wells were of small initial flow they proved up a substantial widening of the deep horizon area. Of particular interest among these new wells was Houston Oil Co.'s No. 2 Rose Lambert, which is the second commercial producer in an area more than 1½ miles to the northeast of the main Refugio production. This well, with five joints of 5⅛-inch screen set at 5,890 feet, came in flowing 625 bbls. daily through a three-sixteenths-inch and a one-quarter-inch choke. The oil is 29.3 gravity (corrected) and pressure on the well is 175 pounds.

The well is approximately 800 feet to the southwest of the discovery well of this area, Union Producing Co.'s (or Houston Gulf Gas Co.) No. 1 M. F. Lambert. That well, a 1,700-bbl. producer, was completed early this year and still is flowing but since then the drilling of five deep tests, not including the new producer, on various sides of the discovery well without getting the oil has all been but condemned the area. One of those tests, Union's No. 2 M. F. Lambert, was completed swabbing between 10 and 25 bbls. daily but was not considered a commercial well and was abandoned.

Houston Oil Co.'s Lambert producer indicates a peculiar faulted or crevice condition in that area with production probably extending in a very narrow strip from northeast to southwest. Union Producing Co.'s No. 3 M. F. Lambert, to which the Houston Oil Co. well is a direct west offset, failed to find the sand and was abandoned after drilling to 5,925 feet. Houston Oil Co.'s No. 1 Rose Lambert, a direct west offset to the discovery well and 789 feet due north of the No. 2 producer, also has failed to make a well.

However, Union Producing Co. is going back into its abandoned No. 3 M. F. Lambert in another effort to find the sand which may have been passed up for some reason. Houston Oil Co. still is working with its No. 1 Rose Lambert, but these two wells apparently define the eastward and the westward limits of the strip of production. The sand, which is at approximately 5,900 feet, is not productive at any other place in the Refugio district as yet.

Four New Wells

In the main deep sand development at Refugio four new wells were completed, two in the 6,400-6,500-foot horizon, one in the 5,400-5,500-foot horizon and the fourth in the 5,600-5,700-foot level. Houston Oil Co. made a substantial extension of the 6,400-foot horizon in its No. 1 West, Block 67, of the townsite. Although the well at present is spraying only about 25 bbls. of high gravity oil (generally called gasoline), the pressure of the well is 2,350 pounds and it is likely with a decline in this pressure the oil production will increase. The sand is at 6,388-97 feet. This well is in the heart of the townsite and some six blocks from the closest 6,400-foot sand production and on the extreme west edge of the deep development. Saxet Oil Co.'s No. 2 Ryals, on the east edge of the field, was completed flowing 190 bbls. of 59 gravity oil on two small chokes from sand at 6,546-65 feet. This well formerly was completed in the 5,400-foot horizons but was deepened. Pearson Properties' No. 3 Ryals, also on the east edge of development, was being completed at the close of the week and no gauge was available. It is in the 5,400-foot sand at 5,472-88 feet. The other deep well was Moody-Seagraves Producing Co.'s No. 2 O'Brien, also on the east edge, which is in sand at 5,690-98 feet. It is spraying 75 bbls. of 57 gravity oil, choked in with 2,000 pounds pressure. Saxet's No. 3 Ryals, south of the same company's No. 2, completed the past week, tested salt water at 5,487-95 feet.

At Barbers Hill

At Barbers Hill there again were no completions, although at the close of the week Humble Oil & Refining Co.'s No. 6 Meyers fee, on the southwest flank of the dome, had drilled plug and, with 12 feet of screen in the hole at 5,808 feet, was testing. This well is approximately 400 feet to the southeast of Yount Lee Oil Co.'s No. 1 Zadie Fisher, the discovery well of the southwest flank production. That well was completed at a depth of 6,661 feet, but at present is being worked over to test a shallower sand. Mills Bennett Production Co.'s No. 1 Henry Fisher, approximately the same distance northwest of the Yount Lee discovery well, also is in oil sand at 6,350-89 feet and has cemented casing to test. This test has run about 50 feet higher than Yount Lee Oil Co.'s No. 2 Fisher, another producer in the same pool, and being about 400 feet distant should make another good well.

In the vicinity of Sun Oil Co.'s No. 1 Winfree, the recent discovery well of the extreme west flank of the dome, four new tests are getting under way, including Sinclair Oil & Gas Co.'s No. 1 Smith, a west offset; Humphreys Corp.'s No. 1 Winfree, a north offset, and Sinclair Oil & Gas Co.'s No. 2 Smith, its west offset. These do not include several semiwildcats scattered along the west side of the dome between the Winfree well and the production of Yount Lee Oil Co. farther to the south.

Gulf Coast Production

Daily average production for the pools in the Gulf Coast area for the week ending September 13 follow:

SOUTHEAST TEXAS

Allen	87
Barbers Hill	17,313
Batson	1,076
Big Creek	3,523
Blue Ridge	2,113
Brenham	146
Boling	1,056
Clay Creek	2,190
Damon Mound	670
DeWalt	12,579
Fannett	675
Goose Creek	4,447
Hankamer	1,794
High Island	812
Hull	8,324
Humble	21,354
Jasper County	25
Lost Lake	664
Markham	395
Nash	295
North Dayton	1,166
Orange	2,429
Orchard	2,295
Pierce Junction	12,056
Port Neches	1,440
Raccoon Bend	11,859
Refugio	29,038
Esperson (Sheeks)	2,815
Saratoga	1,202
Sour Lake	2,201
South Liberty	3,318
Spindletop	16,501
West Columbia	4,196
Total Southeast Texas	170,910
Week ending September 6	171,949
Decrease	1,039

SOUTH LOUISIANA

Anse La Butte	33
Bayou Blue	39
Bayou Bouillon	113
Black Bayou	390
Edgerly	414
Jennings	2,048
Hackberry	3,051
Lake Barre	1,085
Lake Pelto	103
Lockport	2,731
Port Barre	3,090
Sorrento	75
Starks	722
Sulphur	3,025
Sweet Lake	1,165
Vinton	4,402
Welsh	121
White Castle	1,154
Total South Louisiana	23,764
Week ending September 6	24,050
Decrease	286
Total Gulf Coast	194,674
Week ending September 6	195,999
Decrease	1,325

In Esperson Field

In the Esperson Field, western Liberty County, Cranfill-Reynolds company added another good producer in its No. 4 Moores Bluff, which is flowing 300 bbls. pipe line oil daily from sand at a total depth of 2,306 feet. This company has made location for and started drilling in No. 5. Following the gas blowout in the new

(Continued on Page 132)

GULF COAST FIELDS AND WILDCATS

Week Ended September 13

BARBERS HILL—CHAMBERS COUNTY

Mills Bennett Production Co.'s No. 3 E. W. Barber, north	Drlg. lime 4,708 ft.
Mills Bennett Prod. Co.'s No. 1 Henry Fisher, southwest	Cmtd. csg. 6,389 ft.
Mills Bennett Prod. Co.'s No. 4 Gulf-Higgins, southwest	To pump 5,286 ft.
Mills Bennett Prod. Co.'s No. 2 Means (workover)	Pulling liner and screen 5,224 ft.
Humble Oil & Ref. Co.'s No. 6 Fee, west	Drlg. plug 5,808 ft.
Humphreys Corp.'s No. 1 Fitzgerald, north	Drlg. shale 3,097 ft.
Humphreys Corp.'s No. 1-B Barber, north	Sand 3,378 ft.; set 10-in. csg.
Humphreys Corp.'s No. 9-A Kirby, northwest	Coring sand 5,984 ft.
Humphreys Corp.'s No. 6-A Barber, northwest	Cmtd. 10-in. csg. 4,396 ft.
Humphreys Corp.'s No. 8-B Kirby, northwest	Drlg. salt 2,706 ft.
Humphreys Corp.'s No. 2-H Kirby (workover)	Drill stem stuck 6,617 ft.
Humphreys Corp.'s No. 2 Scott (workover)	To deepen 7,296 ft.
Humphreys Corp.'s No. 1 Winfree, west	Derrick.
McAlbert Oil Co.'s No. 1 Higgins (workover)	To pump 5,324 ft.
Republic Production Co.'s No. 3 Kirby (workover)	Drlg. hard sand 6,077 ft.
Rio Bravo Oil Co.'s No. 1 Fisher, southwest	Drlg. water sand 6,016 ft.
Sinclair Oil & Gas Co.'s No. 1 Smith, west	Drlg. gumbo and boulders 1,695 ft.
Sinclair Oil & Gas Co.'s No. 2 Smith, west	Derrick.
Sinclair Oil & Gas Co.'s No. 4 McKinney, southeast	Drlg. lime 3,319 ft.
Sun Oil Co.'s No. 6 Chambers (workover)	Pulling screen to deepen 4,125 ft.
Sun Oil Co.'s No. 9 Wilburn fee, southeast	Drlg. oil sand 5,062 ft.
Sun Oil Co.'s No. 10 Wilburn fee, southeast	Drlg. shale and lime 4,594 ft.
Sun Oil Co.'s No. 11 Wilburn fee, southeast	Drlg. rock 2,062 ft.
Sun Oil Co.'s No. 1 Zadie Fisher, southwest	Drlg. lime rock 4,632 ft.
The Texas Company's No. 4 Wilburn, southeast	Total depth 5,149 ft.; pumping salt water.
The Texas Comapny's No. 1 Williams, southwest	Drlg. shale and lime 4,906 ft.
The Texas Company's No. 1 Winfree, west	Drlg. sand 1,939 ft.
Yount Lee Oil Co.'s No. 1 Fisher (workover)	Water sand 6,378 ft.
Yount Lee Oil Co.'s No. 1 Hindman, southwest	Drlg. shale and lime 5,342 ft.
Yount Lee Oil Co.'s No. 15 Chambers, south	Set 4 joints screen 4,712 ft.
Yount Lee Oil Co.'s No. 3 Fisher, southeast	Drlg. sand 5,997 ft.
Yount Lee Oil Co.'s No. 5 Phillips, southwest	Drlg. hard sand and lime 3,857 ft.
Yount Lee Oil Co.'s No. 9 Woodward, southeast	Drlg. hard sand and lime 2,862 ft.

RACCOON BEND—AUSTIN COUNTY

Humble & Valley's No. 2 Duncan-State	Rig.
Humble & Valley's No. 9 Thompson	Total depth 3,288 ft.; set screen.
Humble & Valley's No. 1 Fritz Lamp	Drlg. shale 3,621 ft.
Humble & Valley's No. 3 Buchanan	Abandoned.
Humble & Valley's No. 3 Diemar	Drlg. sandy shale 1,744 ft.
Humble & Valley's No. 3-G Hardy	Derrick.
Humble & Valley's No. 9 Mueller	Derrick.
Humble & Valley's No. 7 Payne	Derrick.
Humble & Valley's No. 8 Payne	Derrick.
Humble & Valley's No. 10 Payne	Drlg. shale 2,818 ft.
Humble & Valley's No. 6 Saunders	Derrick.
Humble & Valley's No. 3 Sherrod	Location.
Humble & Valley's No. 4 Wilson	Derrick.
Humble & Valley's No. 6 Woodley	Derrick.
Humble & Valley's No. 7 Woodley	Derrick.
Humble & Valley's No. 8 Woodley	Derrick.
Humble & Valley's No. 9 Woodley	Derrick.
Humble & Valley's No. 10 Woodley	Location.
Humble Oil & Ref. Co.'s No. 1 Hugo-Hagen	Drlg. sandy shale 2,554 ft.

Two New Spots in Southwest Texas

One East of Beeville in Bee County and Other in Northwestern Duval County. Third Showing Near Medina County

By B. D. Stevenson
Staff Correspondent, Southwest Texas Fields

SAN ANTONIO, Tex., Sept. 15.—Prospects were rather bright for two new producing spots in Southwest Texas at the close of the week. William F. Morgan-Independent Oil & Gas Co.'s No. 1 Quincy, 12 miles east of Beeville in Bee County, and 20 miles southeast of Pettus Field, at 4,930 feet, blew out a gasser, when the crew was coming out of the hole with a core. Casing has since been set at 4,823 feet. A core taken after it blew out showed 2 feet of shale below 4,930 feet and it is presumed the gas came from above that.

The other important proposition was in northwestern Duval County about 5 miles from the north and west lines of the county and about 9 miles northwest of the Schoolfield-O'Byrne oil pool which is the nearest production. It is the Vacuum-S. R. C. Co.'s No. 1 Duval County Ranch Co. in Section 293. It cored sand showing oil at 1,718-24 feet. Two efforts were made to make a drill stem test and casing has been set.

Both the Quincy ranch test and the Duval County Ranch Co. test will be tried out, probably the last of this week. The two propositions are about 75 miles apart and not in any way related to each other. There are other interesting propositions scattered over the country of lesser importance. Among the more important are the starting of some new tests and preparations to start new tests on some "high-powered" blocks where geology has been very carefully checked by more than one company and where, due to that fact, royalties and leases move at a higher figure than normally. Also Darst Creek is continuing to show increased activity. Magnolia Petroleum Co. is enlarging its refinery at Luling to take care of all Southwest Texas and northern Mexico.

Late in the week there was a third showing at 1,802 feet in the United North & South's No. 1 Little near the south line of Medina County and in the western part of the county due south of D'Hanis. It was preparing to make a drill stem test. It is probably in Taylor marl or at about that place in the geological column and while it may be important is not expected to be a large producer as the Taylor marl does not pay off very big.

Bee County

The test that attracted most attention is the Morgan-Independent's No. 1 Quincy, 12 miles east of Beeville. Karona Oil Co. of Refugio owns the half interest and William F. Morgan and Independent each own a quarter interest. Northern Bee County and adjacent areas in surrounding counties have been attracting so much attention with so many new completions and new producing spots that anything new in that territory gets immediate attention. The Quincy ranch test also follows so closely on the heels of the Simms Oil Co.'s No. 1 Holzmark which came in for 50,000,000 feet of gas, threatening two new pools within a few days of each other.

No. 1 Holzmark makes quite a little gasoline and No. 1 Quincy is dry gas with nothing more than an odor of oil. They are 20 miles apart. A space of country 25 miles east and west by about 20 miles north and south covering most of northern Bee and some of Goliad County now has about 14 producing spots of more or less importance. In the Pettus area there are three pools producing oil and if Grayburg is successful in completing its No. 1 Kimball 7 miles southwest of Pettus there will be four. The other spots are mostly gas wells and for that reason largely consist of only one well, thus far, there being no immediate demand for new gas production. Calliham Field in the east edge of McMullen County is 30 miles southwest of the town of Pettus and there is shallow gas production with a well or two here and there most of the way between the two points across the northern half of Live Oak County which is between McMullen and Bee Counties.

The only completion the past week in the Pettus area was the Sun Oil Co.'s No. 1 Barnett which came in for 20,000,000 feet of gas. It got the sand high and for that reason the gas is not a surprise though it is offset by oil wells and is in the Cosden area west of the town of Pettus.

One other producer was completed in the coast territory. It was the Houston Oil Co.'s No. 1 Ran Morgan which came in a gas well at 1,670 feet and was not gauged. The well being closely watched in that area is the Independent's No. 1 Baldwin, a few miles southeast of the Saxet gas field and down 4,500 feet and drilling. It is below all sands in that part of the country from which any production has been had.

Laredo District

In northwestern Duval County, Vacuum Oil Co. has 75,000 acres of the Duval County Land Co. under lease and a producer on each of three separate blocks of the ranch will hold the whole 75,000 acres. Vacuum made a deal with S. R. C. Co. to drill one of the tests and it is on Survey 293 and is the well reported in the first paragraph of this report as having set casing to make a test of an oil showing at 1,718-24 feet. It is a purely wildcat proposition and the first the company has started on the big ranch which takes the whole northwestern corner of the county.

Last week was the lightest week the Laredo territory has had for some time. There were two oil wells and one gas well completed in the Escobas-Muckelroy Pool, the gasser being for 25,000,000 feet, one of the oil wells for 150 and one for 125 bbls. at regulation depth, and O. W. Killam completed a 75-bbl. oil well in the Killam-Cuellar Pool.

In the Albercas Pool South Texas Production Co. completed a 6,000,000-foot gas well and in the Carolina-Texas Pool in Webb County Washington-Texas Oil & Gas Co.'s No. 1 Barnsley is a 30,000,000-foot gas well with 590 pounds pressure. Only a few new locations were made the past week.

In Brooks County the Houston Oil Co. failed to make a well in No. 2 Wormser-Holbien and is drilling deeper. Total depth is 3,620 feet and at one time it looked pretty good and made a little oil of 41.9 gravity.

Prospects for the National Oil Co. to open a pool in northern Zapata is delayed a little. In No. 1 Don Adams the company at about 700 feet got a lot of gas that blew out and cleaned the hole and caught fire. The test was carried to around 1,170 feet and the hole lost when it had another good showing. No. 2 Don Adams has been drilled to 700 feet, where the company thought to develop a small gas well to get fuel for drilling. Casing was set with a show. The first bailer brought up oil instead of gas. The second bailer run the shale broke in and the casing has since been set in cement. It is believed the casing was set below the gas showing. It will be tested the last of the week for oil. The company eventually will drill this hole or a new one to 1,170 feet, where it had the other good showing.

Interesting Wildcats

The wildcats that are being watched at this time include the S. R. C. Co.'s No. 1 Theis a few miles southwest of Simms' No. 1 Holzmark, which has just been completed for a big gas well. No. 1 Theis is down about 3,800 feet. It and Simms' No. 1 Holzmark and Nichols' No. 4 Hicks, farther northeast, are in a straight line and running about as structures are supposed to run in that country. Nichols' No. 3 Hicks is a gas well at around 2,000 feet. No. 4 Hicks is now down 4,512 feet and with quite a showing of gas and oil at that depth and in an entirely new sand. The location of No. 1 Theis with reference to the other two propositions makes it interesting. Simms' No. 1 Holzmark is a gasser at 3,548 feet.

Penn Oil Co. is starting a test in southeastern Bexar and getting ready to start one in southern De Witt. Both are on carefully worked out structures approved by more than one company geologist and royalties are moving at above normal prices.

Cranfill & Reynolds are starting No. 1 Meyers in the territory south of Seguin in Guadalupe County, where there has been so much wildcatting and where oil men are so convinced there is another pool.

Southwest Texas Production

Daily average production for the pools in the Southwest Texas area for the week ending September 13 follow:

SOUTHWEST TEXAS

Branyon	21
Bruner	16,293
Buchanan	453
Chapman	8,489
Dale	287
Darst Creek	45,550
Kingsville	125
Larremore	30
Luling	9,916
Lytton Springs	767
Manford	290
McMullen	28
Medina	22
Mirando	10,859
Pettus	8,287
Saxet	90
Somerset	1,529
Yoast	329
Total Southwest Texas	103,346
Week ending September 6	94,997
Increase	8,349

LAREDO DISTRICT COMPLETIONS

PRODUCERS

Albercas Field—Webb County

South Texas Producing Co.'s No. 1 Yeager-Stroman, 40-acre Morris tract, Share 5, Las Animas grant, total depth 2,091 feet, 6,000,000 feet of gas.

Carolina-Texas Pool—Webb County

Washington-Texas Oil & Gas Co.'s No. 1 R. O. Barnsley, 325 feet from south line, 768 feet from east line, Block 16, Survey 268, total depth 2,232 feet, 30,000,000 feet of gas.

Jennings-Cuellar Pool—Zapata County

O. W. Killam's No. 26-B Cuellar, 1,885 feet from south line, 1,025 feet from southwest line of Survey 277, total depth 1,569 feet, 75 bbls.

Jennings-Muckleroy Pool—Zapata County

Nordan-Morris and Grimm-Yakey's No. 2 E. de los Santos, 750 feet from southeast line, 382 feet from southwest line, Share 7, Fansler partition, Comitas grant, total depth 1,372 feet, 25,000,000 feet of gas.

W. R. Shankle's No. 7 Trevino, 1,195 feet north of the south corner and 150 feet from east line, Block 15, Survey 65, total depth 1,284 feet, estimated 150 bbls.

W. R. Shankle's No. 3 Gutierrez, 900 feet from northeast line, 3,014 feet from northwest line, Share 4, Fansler Partition, Comitas grant, total depth 1,269 feet, estimated 125 bbls.

ABANDONED TESTS

Cole Field—Duval County

W. E. Mulholland's (Miller and Shaw) No. 2 Benavides, 218 feet from north line, 1,050 feet from west line, Survey 173, total depth 2,837 feet, dry and abandoned.

Kohler Pool—Duval County

Simms Oil Co.'s No. 9 Dinn, 660 feet from east line, 660 feet from south line of the northwest one-fourth of the southeast one-fourth of Survey 143, location abandoned.

Schoolfield-O'Byrne Pool—Duval County

C. E. Long and others' (Shell) No. 1 Bishop Duval Land Co., 2,800 feet from north line, 160 feet from west line, Survey 59, location abandoned.

Charco Redondo Pool—Zapata County

Mid-West Public Utilities Co.'s No. 1 Garcia, 450 feet from southwest line, 450 feet from southeast line, M. P. de Garza tract, Block 33, Pedernal grant.

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WILDCAT OPERATIONS IN SOUTHWEST TEXAS

ATASCOSA COUNTY

Company, farm and location—	Remarks:
Frontier Oil Co.'s No. 2 Boynton, 775 ft. SW of Brown-Fuller gas well	T. D. 1,920 ft.; drlg. lime.
Nute, Walder & Derden's No. 1 J. B. Young, 750 ft. W line, 370 ft. E line of 107-ac. tract in the Wm. Moore Sur.	Location.

BLANCO COUNTY

Anderson & Manning's No. 1 Speer, 600 ft. to S line, 800 ft. to W line, John W. Speer Sur.	Moving in rig.
Ben H. Ashe Pet. Corp.'s No. 1 Glasscock, moving in to drill on leases out of the Rodson block north of Blanco City	Location.
Hardy Sitton's No. 1 McMillan	T. D. 252 ft.; drlg. lime.
Liles-Adams et al's No. 1 Stanford, 150 ft. to S line, 1,420 ft. to E line of James Stanford's No. 155	T. D. 531 ft.; resetting casing.
McCreary et al's No. 1 Schenling, 900 ft. to SE line, 600 ft. to S line of J. A. Rouse No. 118 Sur., 4 miles SW from Blanco City	T. D. 660 ft.; shut down.
J. R. Meek's No. 1 Walker, 360 rds. from W line, 482 rds. from S line of 375-ac. tract in Survey No. 23	T. D. 710 ft.; drlg.
C. Rosenfield's No. 1 Hohenberger, 800 ft. to W line, 1,250 ft. to N line, Sur. No. 94	T. D. 250 ft.; drlg.

BASTROP COUNTY

Pacific Oil & Gas Co.'s No. 1 J. Spooner, 300 ft. from N line, 400 ft. from W line in the L. Lavenuz Sur., 4½ miles E from Cedar Creek	T. D. 2,368 ft.; shut down.
Pacific Oil & Gas Co.'s No. 1 J. M. Litton, 150 ft. N and W lines of tract	Derrick.
Majestic Pet. Co.'s No. 1 J. M. Breeding, 160 ft. from N line, 1,020 ft. from W line of 200-ac. tract, 940 varas from W line, 1,225 varas from S line of M. Andrews Sur., 13 miles W from Smithville	T. D. 76 ft. (corrected); shut down.
Champion and others' No. 1 Smith, 2,541 ft. to NW line, 663 ft. to SW line of tract, E. Standifer Sur.	T. D. 1,150 ft.; drlg. shale.
Texas Pet. Products Co.'s No. 1 Trigg, Stewart Sur.	Location.
Texas Dev. Co.'s No. 1 H. B. Smith, 2,341 ft. N line, 663 ft. W line of tract, J. Burleson Sur.	Location.

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More Bitumen in Barrett Specification PIPE LINE ENAMEL

Revolving pipe method of applying Barrett Specification Pipe Line Enamel.

For Pipe of large diameter The Barrett Company will furnish equipment required to revolve pipe and spread coatings.

Barrett Specification Pipe Line Enamel—one of the Anti-Corrosion Products being applied by sling to an 8-inch oil line.

HERE'S an important point to bear in mind when choosing a protective coating for any pipe line: The quantity and quality of coal-tar bitumen in the coating determines its waterproofing efficiency.

Barrett Pipe Line Enamel for pipe line protection not only makes use of the finest grade of coal-tar bitumen (pitch), but the maximum amount possible is used per finished ton. By applying the standard tests approved by the American Society for Testing Materials, this fact can be established.

The flake-type *reenforcement* used in Barrett Pipe Line Enamel, as distinguished from ordinary *fillers*, reduces by at least one-third the usual amount needed. This permits the use of a larger percentage of the most reliable waterproofing agent known—coal-tar pitch.

This flake-type *reenforcement* has still other important advantages; it places the point of adequate flow at lower temperatures, reduces fumes to a minimum and saves fuel in application. The flake particles bonded with the bitumen, laminate and form a structure lending tensile strength and toughness. Finally, this *reenforcement* is a material admitted to be the best electric insulator known—and is likewise non-porous, non-absorbent, heat-resisting and chemically inert.

An additional assurance that Barrett Anti-Corrosion Products and Specifications offer dependable service to pipe line owners and operators is found in the reputation of other Barrett products — Barrett Specification Roofs, Tarvia and Barrett Underground Waterproofings for tunnels, dams, subways, etc.

Remember, too, that Barrett Service, Field Inspection and Quantity Surveys are supplied — and are backed by 76 years of waterproofing experience. Bulletins on Barrett Specification Anti-Corrosion Products can be had for the asking.

The Barrett Company

40 Rector St., New York

Extend Hobbs Pool Several Directions

Six Completions and Two New Locations During Week. Show of Oil in Hot Springs County, Wyoming, Test. Producer in Oregon Basin

By Tolbert R. Ingram
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., Sept. 15.—The Hobbs Pool in Lea County, New Mexico, was extended in several directions by completions the past week. The Gypsy Oil Co.'s No. 5 Grimes, which gauged 243 bbls. the first hour, is half a mile southwest of the nearest producer, and the same company's No. 1 Graham, which is ready to be tested, extends the producing area half a mile to the north. The Landreth Production Co.'s No. 1-B State, estimated at 2,768 bbls., is one location east of the nearest producer. Two new locations announced, one by the Midwest Refining Co. and the other by The Texas Company, will prove up additional territory on the southwest. Six wells were completed, of which five were finished in time to come under proration on September 1. There were 69 active operations, of which 20 are on top of the pay. The largest completion was the Shell Petroleum Corp.'s No. 2 McKinley, which was given a potential of 17,042 bbls. The Ohio Oil Co.'s No. 1 State-McDonald, in the Eunice district, 25 miles southwest of the Hobbs Pool, is estimated at 200 bbls. of oil and 30,000,000 feet of gas. Tidal Oil Co.'s No. 1 Colman, Eunice district, is flowing 367 bbls. daily after drilling deeper. The Texas Pacific Coal & Oil Co.'s No. 1 State, in the Cooper area, had a show of oil below the sulphur water.

Colorado had no completions and only one new operation, the latter being a test on the Fish Creek structure in Routt County. The Jones well in the southeastern corner of the State had a good show of gas.

The Midway Dome test in Wyoming pumped 680 bbls. of fluid in 24 hours, one-third was water. Two tests to the Dakota are under way in the Big Muddy. The Midwest Refining Co. has a show of oil in the top of the Embar in its Wagonhound test in Hot Springs County. The Texas Production Co. is completing a producer in Oregon Basin. One new operation is being started in Fremont County on the Bartram Gap Dome.

NEW MEXICO

Hobbs Pool—Lea County

There was a rather hectic rush among some of the operators in the Hobbs Pool in Lea County, New Mexico, in the last week of August in an effort to complete wells near the pay so as to bring them under the proration agreement on the first of September. As a result, Umpire Staley's report as of September 1 showed 54 wells on production with an average potential of 415,535 bbls., a figure much larger than anybody expected in that time a few months ago. Six wells have been completed since last report, all of which came under the wire by September 1 with one exception. Two new locations were announced this week. The number of active operations is 69, including the two new locations, of which two have been drilled into the pay and are ready to be tested, 8 have not yet spudded, and 20 are below 3,900 feet. It is the last figure which is causing the oil scouts some restless nights in their efforts to keep up with the completions and which point to another substantial jump in the potential capacity of the field at the end of the present period on September 15.

The two new locations are the Midwest Refining Co.'s No. 26 State, C SE SW, Section 4-19-38, which is rigging up, and The Texas Company's No. 3 McKinley, C SW SW, Section 4-19-38. While these two locations offset each other, they are a little to the southwest of producers and will prove up some additional territory.

Six Completions

The six completions are as follows:

The Shell Petroleum Corp.'s No. 2 McKinley, SW cor. SE, Section 19-18-38, was tested at 4,165 feet and gauged 712 bbls. the first hour. It was drilled 5 feet deeper when the core barrel was lost and a fishing job ensued. It got under the wire by September 1, however, and was given a potential of 17,042 bbls. It topped the pay at 4,040 feet. It is one location north of the Getty Oil Co.'s No. 4 McKinley, which was given a potential of 14,061 bbls., and a diagonal offset on the northeast to the Amerada Petroleum Corp.'s No. 3 McKinley, which was rated at 14,080 bbls.

The Landreth Production Co.'s No. 1-B State, SW cor. NW, Section 33-18-38, was drilled to 4,197 feet and was estimated at 2,768 bbls. of oil and 10,000,000 feet of gas. It is the first well completed in Section 33 and extends the productive area one location to the east. It is an offset on the east to Shell's No. 3-A State, and the best well of the two. It topped the anhydrite at 1,500 feet and the brown lime at 2,754 feet. The elevation is 3,639 feet. The first gas was at 2,810 feet and the first oil at 3,143-48 feet.

The Midwest Refining Co.'s No. 26 State, C SE NW, Section 4-19-38, was completed at 4,190 feet with the 3-inch tubing at 3,986 feet. It was given a potential of 2,203 bbls. of oil and 5,000,000 feet of gas. It is in the midst of several good producers and proves up no new territory.

The Midwest's No. 33 State, SE SW NW, Section 4-19-38, an offset on the southwest to its No. 26 State, was completed at 4,175 feet and estimated at 4,536 bbls. of oil and 5,000,000 feet of gas.

The Humble Oil & Refining Co.'s No. 5 Bowers, NW NE SE, Section 30-18-38, was drilled to 4,125 feet and gauged 772 bbls. of oil the first hour with 10,400,000 feet of gas. The oil was found at 4,010-4,215 feet. It topped the anhydrite at 1,440 feet and the brown lime at 2,785 feet. The elevation is 3,652 feet. This well is in the same forty and just 300 feet northwest of its No. 1-A Bowers, the well which started the present drilling campaign in the Hobbs Pool and which averaged 7,500 bbls. daily when connected with the pipe line last May.

The Gypsy Oil Co.'s No. 5 Grimes, SW cor., Section 32-18-38, gauged 243 bbls. of oil and 3,500,000 feet of gas the first hour, open flow, from a total depth of 4,192 feet. It proves up some additional territory on the southwest, being half a mile southwest of the nearest producer. Three offsets are being drilled by the Atlantic, Midwest and Shell companies. This well is the only one of the completions reported which did not finish in time to go on proration on the first of the month.

Other Producers

Three wells reported last week as drilling in and since completed, are as follows: The Shell Petroleum Corp.'s No. 3-A State, SE cor. NE, Section 32-18-38, was estimated at 1,055 bbls. of oil and 38,000,000 feet of gas the first 24 hours. Total depth was 4,185 feet and the top of the pay was at 3,991 feet. It topped the anhydrite at 1,500 feet and the brown lime at 2,750 feet. The elevation is 3,636 feet. The first gas was at 2,788 feet and the first oil at 3,140-46 feet.

The Humble Oil & Refining Co.'s No. 3 Bowers, SW cor., Section 29-18-38, was estimated at 13,200 bbls. of oil and 13,265,000 feet of gas the first 24 hours. It found the pay at 3,990-4,202 feet. Same company's No. 4 Bowers, SE cor., Section 30-18-38, an offset on the west to its No. 3 Bowers, was given a potential of 15,358 bbls. of oil and 10,000,000 feet of gas from the pay at 3,995-4,206 feet. It topped the anhydrite at 1,450 feet and the brown lime at 2,761 feet. The elevation is 3,646 feet. The first gas was at 2,785-88 feet and the first oil at 3,161-66 feet.

Two wells drilled to completion and preparing to test, are the Gypsy Oil Co.'s No. 1 Graham, SE cor. NE, Section 24-18-37, which is bottomed at 4,225 feet, with the top of the pay at 4,080 feet, and the Amerada Petroleum Corp.'s No. 2-B State, SE SW NE, Section 29-18-38, which found the pay at 4,040-4,207 feet. The last named adds some new territory, being a little less than half a mile northwest of the Tidal Oil Co.'s No. 1 Grimes, the largest producer in the field, and 1 mile to the east of the nearest producer in that direction. The Gypsy well also adds some new territory on the north and west, being half a mile to the north of the Texas Pacific Coal & Oil Co.'s No. 1-G State, the nearest producer.

Drilling Operations

Routine drilling operations include the following:

The Amerada Petroleum Corp.'s No. 2-A State, NE cor., Section 32-18-38, is drilling at 3,264 feet in anhydrite and lime. The first oil sand was at 3,140-50 feet, with a flow of 50,000,000 feet of gas. Same company's No. 1-B State, SW SE NW, Section 29-18-38, is drilling at 3,952 feet in lime and its No. 3-B State, SE NW NE, Section 29-18-38, spudded on August 29, and cemented the 12½-inch at 241 feet in the red beds. Amerada's No. 4 McKinley, SW cor. NW, Section 30-18-38, cemented the 9⅝-inch at 2,749 feet in anhydrite. The top of the anhydrite was at 1,475 feet and the elevation at 3,662 feet. Its No. 4-B State, NE cor. NW, Section 29-18-38, spudded September 1, and cemented the 12½-inch at 242 feet in the red beds.

The Atlantic Oil Producing Co.'s No. 1 State, NE cor., Section 6-19-38, topped the pay at 4,035 feet and is drilling at 4,048 feet, and its No. 1 Grimes, SW cor. SE, Section 20-18-38, is rigging up rotary at 236 feet.

The California Co.'s No. 2 State, NE SW SE, Section 29-18-38, is coring at 3,860 feet, and its No. 3 State, SE cor., Section 29-18-38, cemented the 9⅝-inch at 2,743 feet. Last named bottomed the salt at 2,553 feet. The California Co.'s No. 4 State, SW cor. SE, Section 29-18-38, is drilling at 1,460 feet in red rock, and its No. 1 McKinley, CSL NW, Section 20-18-38, is drilling at 1,556 feet in red rock.

The Continental Oil Co.'s No. 1-A State, SE NW SE, Section 29-18-38, is drilling at 3,895 feet in lime, and its No. 2-A State is drilling at 3,365 feet in anhydrite and lime. Same company's No. 3-A State, NE NW SE, Section 29-18-38, is drilling at 2,750 feet in anhydrite. It bottomed the salt at 2,575

(Continued on Page 114)

TURNER VALLEY AUGUST PRODUCTION SECOND LARGEST IN FIELD'S RECORD

By Victor Lauriston
Staff Correspondent, Canadian Fields

CHATHAM, Ontario, Sept. 13.—Deliveries from the Turner Valley Field for August aggregated 110,801 bbls. Except for the record month of June, 1930, when deliveries aggregated 116,112 bbls., August was the most productive month in the history of the field, showing an increase of 14,917 bbls. over the 95,884 bbls. for July.

August deliveries to Imperial Oil, Ltd., aggregated 99,423 bbls., compared with 82,542 bbls. in July. The August figures included 61,057 bbls. of crude naphtha compared with 48,573 bbls. in July; 35,880 bbls. of discolored naphtha compared with 30,362 bbls. the previous month; and 2,486 bbls. of light crude oil compared with a July production of 3,607 bbls. Deliveries to Regal Oil & Refining Co., which were unclassified, were 11,378 bbls. in August as against 13,342 bbls. in July.

The July decline was due to the temporary freezing of a number of the larger producers, of which the Home wells in August came strongly back into production. Thus Home's No. 3 increased from 936 bbls. in July to 7,419 bbls. in August; it was the largest producer for the latter month. Other large individual producers were Royalite's No. 6, with 6,686 bbls.; Royalite's No. 17, with 6,363 bbls.; Royalite's No. 19, only recently completed, with 4,967 bbls. Lowery Petroleum's No. 1, entirely frozen off in July, delivered 6,991 bbls. in August.

Among the newer producers are several good wells. Royalite's No. 23 delivered 3,164 bbls., and Calmont Oils' No. 2 produced 4,538 bbls. Freehold Oil Corp.'s No. 2 increased production to 3,101 bbls., and Advance Oil Co.'s No. 5-A, which looked originally like a very small well, jumped its deliveries to 4,342 bbls. Dalhousie Oil Co.'s No. 7, in production for only part of August, delivered 2,840 bbls. Mercury Oils' No. 3 is proving a good well, with 5,649 bbls. for August, while No. 2 produced 809 bbls. Alberta Pacific's Nos. 1 and 2 showed a combined production of 1,403 bbls. The north end has only two producing wells, both about the average, Foothills Oil & Gas Co.'s No. 1 making 3,371 bbls., while Model Oils' No. 1 further increased its deliveries to 5,077 bbls.

Imperial Oil, Ltd., showed crude naphtha production from 19 wells, discolored naphtha production from 21, and light crude oil from 8, but some wells produced two or more grades. Imperial took production from 42 different wells. The Regal refinery took production from 11 wells, indicating the field now has 53 different producers. Production for the entire field averaged 3,574 bbls. a day in August. With two or three new producers, indications are that this production will at least be maintained in September.

Imperial Tests

In South Turner Valley, two wells of the Imperial string have been tested for production. Home Oil Co.'s No. 5, LSD 7, Section 20-19-2w5, was shot at 4,890 feet. Before the shot it was making around 3,000,000 feet of wet gas from a depth of 410 feet in the lime. The ini-

(Continued on Page 128)

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New Oil Field in Kern County, Calif.

Shell Oil Corp. Completes Discovery Well Making Fairly Light Crude. Big Producer Brought in at Kettleman Hills

By L. P. Stockman
Staff Correspondent, California Fields

LOS ANGELES, Calif., Sept. 13.—The outstanding development in California during the past week was the discovery of a new oil field in the Weed Patch area of Kern County located approximately 15 miles southeast of Bakersfield, and while its potentiality is still somewhat in doubt those familiar with this section are of the opinion that a real oil field has been discovered. The discovery well, No. 1 Porter Day of the Shell Oil Corp., located in Section 29-30-29, was not especially impressive as the initial daily output only approximated 250 bbls. of 20.7 gravity oil from 5,370 feet, but this may be due, however, to the probability that the discovery is an edge well. The assumption that No. 1 Porter Day is probably an edge well is based on the fact that production is cutting approximately 35 per cent water and also because unproductive showings were logged higher up in the hole, the latter angle indicating that an upper zone may have pinched out before it reached this location. The oil produced by No. 1 Porter Day, 20.7° A.P.I., is the lightest grade of crude produced in the eastern edge of the San Joaquin Basin, as clean oil from this well, which is at present cutting 35 per cent water, should average around 25 degrees. Another significant factor, and one which indicates the existence of a substantial accumulation, is the unusually high gas pressure, 270 pounds on the tubing and 1,300 pounds on the casing. Subsequent work in this area should prove particularly interesting from a geological standpoint because of the presence of a granitic formation in the San Emidio Mountains to the east and south. The Weed Patch area is located in the southeastern part of the San Joaquin Basin and its topographic feature is a long rolling plain extending from northwest to southeast. In the eastern end of the San Joaquin Basin granite outcrops appear in the hills but this formation plunges downward until out in the center of the basin it is beyond the reach of the drill with its present limitations.

Encounters Granite

In the Mount Poso and Round Mountain Fields, located north of the Weed Patch area, granite has been encountered immediately below present producing horizons. The existence of granite in these areas retarded development for a number of years until the Shell proved the possibility of developing commercial production above the granite and opened up the Mount Poso Field in 1926. The Elbe Oil & Land Co., which subsequently disposed of its holdings to the Shell and Honolulu Consolidated, achieved a similar result some time later when it discovered the Round Mountain Field. A similar situation exists with respect to the Weed Patch area although the condition is exaggerated as this district is further removed from the granitic outcrops and consequently requires considerably deeper drilling before the basement complex is reached.

The Shell appears to control practically all of the possible productive acreage in this new field at the Weed Patch as it tied up several thousand acres previous to the initiation of work. No. 1 Porter Day is the second attempt of the Shell to develop commercial production in the Weed Patch district as its first test, No. 1 Goff in Section 30-30-29, was drilled and abandoned as a duster in 1929, although the well logged some favorable showings before abandonment at 4,200 feet. The extensive holdings of the Shell in the Weed Patch area aggregating about 3,000 acres precludes competitive drilling and development work in this field will probably be retarded for several years, such as has been done at Mount Poso and Round Mountain, although the company will of course be obliged to conduct a limited amount of drilling in conformity with lease requirements.

Kettleman Hills

The Superior Oil Co.'s No. 1 Huffman, finished in the north dome of the Kettleman Hills Field last week flowing 6,500 bbls. of clean 45.1 gravity oil per day from 8,327 feet, has subsequently built up to 7,500 bbls. per day and may register a further substantial increase after it has been on production for several days longer and the subterranean production channels have become more pronounced. This new well, located in Section 29-21-17 in the extreme western end of the Kettleman structure and the deepest well stratigraphically to be drilled in this area up to the present time, is the first producing project to be finished in that part of Kettleman Hills extending over into Fresno County. The major portion of the Kettleman Hills Field, as defined at the present time, is situated in Kings County, which is located between Fresno and Kern County.

The top of the Temblor was encountered in No. 1 Huffman at 7,075 feet and although a penetration of 1,252 feet was taken before the conclusion of work the upper 300 was cemented off as a precautionary measure and in an effort to case off the high pressure gas which has been characteristic of all wells finished in this field up to the present time. The unexpected substantial production of this well made it necessary for the Union Oil Co., which has contracted for the production, to rush construction of a new gathering line in order that no time should be lost as the Superior's lease tankage only consisted of four 5,000-bbl. tanks. This new well is located outside the area covered by the Kettleman Hills agreement and is therefore permitted to flow unrestrained except that it will probably be beaned back in conformity with the statewide curtailment program. It is the present intention of the Superior to start the immediate construction of a natural gasoline plant capable of handling the production of this well although an allowance will be made so that facilities may be enlarged in the event that subsequent developments demand it.

Bought Acreage Cheaply

One of the most interesting features in connection with the completion of No. 1 Huffman is the fact that this 160-acre parcel was secured for a mere song. Up until a few years ago acreage in this area was regarded as practically worthless except for grazing purposes. M. D. Huffman, the present owner, purchased it at a delinquent tax sale for approximately $750, which, on the basis of present production of the Superior's new well, represents less than one-tenth of current daily production. The Huffman property is at the present time owned by M. D. Huffman, former Fresno County supervisor, and Mrs. Idyll Hardie, a Fresno school teacher, the former having several years ago sold the latter an undivided quarter interest.

The Superior's No. 1 Huffman definitely proves up the existence of substantial production for a distance of more than 10 miles along the axis of the structure in the north dome of Kettleman Hills. This is of special significance because it indicates the absolute necessity for operators in this field to formulate a drilling or production program which will hold the production of this field down to a relatively small part of its potentiality. This one field alone contains enough gasoline to fill the normal requirements of the Pacific Coast for more than 25 years, and it is conservatively estimated that it will supply sufficient natural gas for California markets for the next 50 years if production is restricted and unnecessary waste of natural gas prevented. Its enormous potentiality and the absolute necessity of restricting drilling and production activities is therefore quite obvious, especially in view of the fact that unregulated development could wreck the gasoline markets of the world and render it economically impossible to refine the heavier grades of crude oil with which it would compete. It is probably quite difficult for one unfamiliar with prevailing conditions to appreciate the importance of Kettleman Hills because it is probably the only field of major importance in existence at the present time. The crude oil produced in this field at the present time average 60.1° A.P.I. and contains in excess of 85 per cent gasoline. In addition to the production of crude oil, Kettleman Hills is yielding a substantial amount of natural gasoline. Several projects at Kettleman Hills are producing more than one-half a barrel of natural gasoline for every barrel of crude oil secured, a surprisingly high ratio.

Gas Conservation Law

The completion of No. 1 Huffman and the probable completion of several more wells in the north dome of Kettleman Hills is particularly interesting at the present time in view of the fact that the California supreme court is expected to render a decision as to the validity and constitutionality of the gas conservation law some time this month. This decision is the outgrowth of litigation involving enforcement work in the Santa Fe Springs Field of Los Angeles Basin and will establish a precedent upon which future enforcement work will be based. Santa Fe Springs has subsequently become a negligible factor as far as gas waste is concerned but there are several other fields in the State, such as Kettleman Hills, Elwood, Long Beach and Ventura Avenue, where a more stringent application of the gas conservation law may be effected. If the decision of the State supreme court is favorable, the director of natural resources will undoubtedly institute immediate proceedings to abate gas waste which, incidentally, also includes uneconomic utilization, in the very near future. If, on the other hand, the court holds that the present law is unconstitutional, another measure will be drafted and submitted to the State legislature which convenes, I believe, in December. It has not yet been decided just what will form the basis of any new legislation except that conservationists will benefit by litigation undertaken up to the present time. It may be possible that the present measure may be retained and made more definite by legislative action. The gas companies in California are public utilities and as such are under the direct jurisdiction of the State Railroad Commission, a governing body which establishes the commercial rate of natural gas charged domestic and commercial users. Some of the legal profession are of the opinion that the State Railroad Commission has the necessary authority to require natural gas companies to purchase natural gas from producers ratably. This is a rather complicated situation, however, and while it appears theoretically equitable it might prove impractical because it would require the gas companies to install individual mains to each parcel of productive acreage.

Playa Del Rey

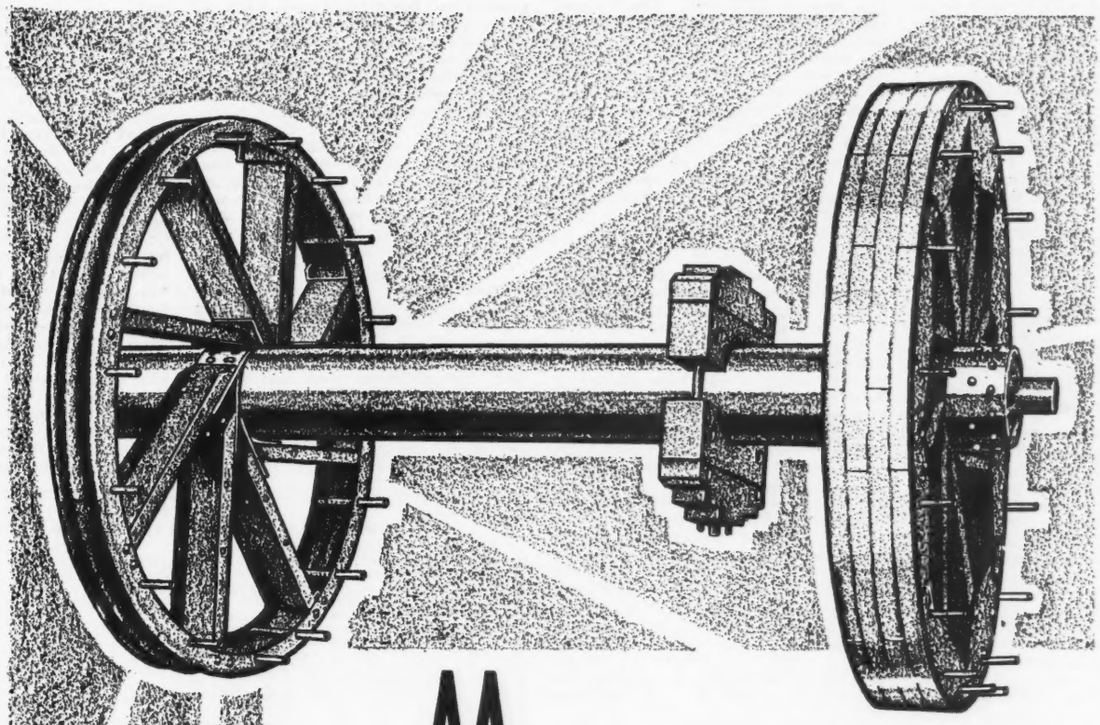
The Playa Del Rey Field of Los Angeles Basin occupied a prominent position in the spotlight during the past week due to the completion of several new wells which has resulted in a substantial increase in daily production. The scope of work in this field is increasing from week to week with the result that drilling operations are no longer centered in any particular section of the field. Rigs at the present time extend in an almost unbroken line from the eastern to the western end of the field with considerable new development getting under way between the speedway and the ocean front. Superior Judge Harry W. Falk has permanently enjoined the city of Los Angeles from leasing the tidelands adjacent to the Playa Del Rey Field, thus preventing drilling operations of any kind out in the ocean beyond the tide line. Statutory legislation which reads, "on and after September 1, 1929, no lease shall be made, executed or delivered by the State or any official thereof or by any political subdivision or any official thereof for tidelands whether

TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Commodity—	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Crude oil	.....	.....	.....	.....	68,690	997,250
Fuel oil	.....	.....	.....	.....	71,950	49,950
Diesel and gas oil	65,285	9,326	.....	.....	2,450,761	1,210,934
Gasoline	204,336	29,191	412,323	58,903	13,792,133	14,490,494
Naphtha distillate	.....	.....	.....	.....	.....	81,750
Coastwise—						
Crude oil	288,606	41,229	211,000	30,143	10,645,209	18,049,157
Fuel oil	247,584	35,369	510,092	72,870	11,783,662	13,566,099
Diesel and gas oil	.....	.....	.....	.....	1,180,938	823,256
Gasoline	232,815	33,259	352,379	50,340	8,924,602	7,672,357
Kerosene	.....	.....	5,177	740	134,514	61,914
Exports—						
Crude oil	44,711	6,387	192,996	27,571	4,780,500	4,087,983
Fuel oil	357,685	51,098	290,392	41,485	12,533,774	12,591,781
Diesel and gas oil	28,493	4,070	63,322	9,046	3,161,978	1,869,265
Gasoline	521,299	74,471	418,029	59,718	11,384,391	8,394,114
Kerosene	24,080	3,440	92,511	13,216	2,814,796	2,335,741
Lubricants	.....	.....	.....	.....	14,680	.....

TANKER SHIPMENTS FROM SAN FRANCISCO TO ATLANTIC AND GULF COAST PORTS

Diesel and gas oil	51,440	7,349	.....	.....	279,088	.....
Gasoline	80,420	11,489	67,310	9,616	931,097	1,583,425
Lubricants	.....	.....	7,998	1,143	24,774	138,706
Coastwise—						
Fuel oil	.....	.....	.....	.....	2,337,108	1,980,204
Diesel and gas oil	.....	.....	.....	.....	190,516	342,313
Gasoline	46,130	6,590	16,128	2,304	2,796,104	3,453,256
Kerosene	4,277	611	1,520	217	158,499	96,996
Exports—						
Crude oil	.....	.....	.....	.....	3,075	121,603
Fuel oil	.....	.....	.....	.....	662,135	602,070
Diesel and gas oil	.....	.....	.....	.....	398,829	261,565
Gasoline	.....	.....	178,101	25,443	2,783,272	4,050,690
Kerosene	.....	.....	5,160	737	508,528	406,730
Lubricants	1,177	168	.....	.....	19,849	25,713



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filled or unfilled, submerged land, overflooded land or the beds of navigable rivers or lakes," was used as the basis of Judge Falk's decision. The court ruled that, "in the instant case, it appears that the city of Los Angeles by and through its duly appointed officers attempts to do an act not only void and unauthorized but directly contrary to the express provision of this statute. The taxpayers of Los Angeles have certain rights in the title of submerged land held by the city, which interest sufficiently entitles them to maintain an action enjoining the city from doing an unlawful act in respect thereto." The permanent injunction issued by Superior Judge Falk resulted from an action instituted by Lewis Stone, a motion picture actor, whose beach home adjoins the municipal beach. The city of Los Angeles had attempted to lease the submerged ocean tidelands for drilling and intended to divert any revenue secured to the city playground commission to be disbursed for recreational purposes. The city will appeal the decision based on the State law prohibiting the State or its subdivisions from leasing submerged tideland for the express purpose of definitely establishing the legal right of municipalities with respect to tideland development.

Drilling Deeper

Although the upper, or Del Rey zone in the Playa Del Rey Field has been proven commercially productive, operators in this field are passing up this horizon in most cases in order to produce from the lower or Recreation zone which has been found more productive. One new well was finished in the upper zone this week, however, and this well, No. 1 Fraser of the Kelly Oil Co., proved commercially productive as it was good for 420 bbls. of 22.9 gravity oil and 1,900,000 feet of saturated gas per day from 4,319 feet. This well, which probably did not cost more than $50,000 to drill, showed an initial daily production equal to the El Camino Oil Co.'s No. 1 Venice, which was drilled into the deep Recreation zone at a cost of approximately $75,000. The latter well, finished a few days ago, registered an initial of 430 bbls. of 23.1 gravity oil and 500,000 feet of natural gas per day from 6,119 feet.

The Allied Petroleum finished a nice well in this field during the week when its No. 1 Venice, a new well, was brought in flowing 1,800 bbls. of 23.2 gravity oil and 2,000,000 feet of natural gas per day from the Recreation zone at 6,131 feet, the conglomerate being topped at 6,104 feet and the hole finished with a 5¾-inch landed at 5,875 feet. Burket & Braun's No. 1 Del Rey, which picked up the conglomerate at 6,110 feet and encountered the top of the Schist at 6,130 feet, was brought in flowing 951 bbls. of 22.6 gravity oil and 770,000 feet of natural gas per day from 6,133 feet.

The Mutual Oil Co. brought in its No. 1 Baumgartner several days ago and this new well, which topped the conglomerate at 6,113 feet, was completed flowing 810 bbls. of 21.9 gravity oil and 600,000 feet of natural gas per day from the Recreation zone at 6,177 feet. The Mohawk Oil Co. recompleted No. 1-0 flowing 480 bbls. of oil and 6,000,000 feet of natural gas per day from 5,645 feet. This well, which was originally completed a week or two ago without securing permission of the State Mining Bureau, which must pass on all water tests, was subsequently killed and recompleted under the proper supervision. The Mohawk also completed a new well this week when No. 1 in Block I was brought in flowing 260 bbls. of 23.1 gravity oil per day from the deep zone at 5,729 feet.

Elwood

Although several substantial producing wells have been completed in the Elwood Field of Santa Barbara County during the past month or so, field production is being curtailed in conformity with the existing conservation program. A substantial reduction has been effected in daily production at Elwood during the past week and current production at the present time is substantially below the allotted amount. The recent completion of substantial producing wells increased field production during the course of the customary five-day flow test but this excess production is being made up by cutting back current production below the allowable maximum. In other words, production of the Elwood Field, while it may fluctuate from time to time because of the completion of new wells, its production over a long period of time will be equalized so that the aggregate production should approximate the amount allotted to that field. It is impossible to maintain a strictly stabilized daily production as long as drilling operations continue and new wells are completed from time to time.

The Bankline Oil Co. successfully completed its well No. 4 on tideland permit No. 89 a few days ago and this new producer, an offset to the Barnsdall and Rio Grande's No. 4 on permit No. 88, which recently established a maximum potential of 13,000 bbls. per day, registered an initial of 2,750 bbls. during the first 24 hours following completion at 3,393 feet. Two more wells are expected to be finished in the Elwood Field within the next 30 days and substantial production is anticipated in both instances. These wells are the Barnsdall and Rio Grande's No. 5 on permit No. 88 and the Elwood Exploration Co.'s well No. 5 on permit No. 90.

In the prolific Ventura Avenue Field the Associated Oil Co. finished No. 47 Lloyd flowing 475 bbls. per day from 6,705 feet but this well will probably require some further corrective work as the output is cutting approximately 40 per cent, indicating that a satisfactory water shutoff has not been effected. Both the Associated and Shell should be in a position to finish additional wells at Ventura Avenue within the next 30 days as there are several projects rotating ahead in the oil sand at the present time. The Richfield Oil Co. failed to secure an effective water shutoff in No. 4 Miley Hobson, a new well being drilled in the Rincon Field of Ventura County and additional corrective work will be required. The Valmont Oil Co. has completed preparations to make a production test on No. 1 Birdie-Cline, a new well being drilled in the Santa Barbara Mesa Field, and it is expected to be put on a pumping test within the next few days.

Long Beach

There were no developments of special importance in the Long Beach Field during the past week although a couple of small wells were finished. These projects, however, hardly rate mention as in each case additional work may be required before commercial production is secured. Al Johnson's No. 1 Castle, for instance, was only good for 100 bbls. per day on the compressor from 6,990 feet with the output cutting approximately 50 per cent. This well, bottomed at 7,041 feet and plugged back to 6,990 feet, will probably be plugged back still further or a more effective plug put on bottom. N. A. Macrate's No. 1 Hines was another well which showed an excessive water cut as current production, 50 bbls. per day from 6,890 feet, is cutting 50 per cent.

Although Huntington Beach is one of the oldest of major fields discovered in Los Angeles Basin since 1919, no tideland development has heretofore been undertaken. It is a recognized fact that part of the potentially productive acreage at Huntington Beach is located out beyond the tide line adjacent to present production developed along the ocean front. The existence of this potentially productive submerged land dates back several years to the time when the town lot area was developed along the ocean front. Tideland development was prohibited along about this time by legislative action, however, as the California leasing act prohibited the leasing of State tidelands located within the corporate limits of any municipality. The successful culmination of litigation within the past few weeks has opened up the way for initiation of work on Huntington Beach's first tideland drilling project. The permit which will be developed in the immediate future was issued several

(Continued on Page 131)

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Company, well and location—	S.T.R.	Depth	Status—
Union, No. 1 Orchard Dale, Los Angeles Co.	10- 3-11	4,550	sd. sh. drilling
Olympic Realty Corp., No. 1 Venice, Los Angeles Co.	14- 2-15	1,780	sd. sh. drilling
Burlingham Pet., No. 1 Compton, Los Angeles Co.	17- 3-13	4,490	suspended
Francis, Don, No. 1 Compton, Los Angeles Co.	8- 3-13	572	recemented
Carlyn, C. H., No. 1 Compton, Los Angeles Co.	9- 3-13	1,000	abandoned
Carlyn, C. H., No. 2 Compton, Los Angeles Co.	9- 3-13	470	sd. drilling
Central Oil Co., No. 1 Compton, Los Angeles Co.	28- 3-13	5,094	plug back
Combs, E., No. 1 Compton, Los Angeles Co.	16- 3-13	570	suspended
Guajome Oil Co., No. 1 El Nido, Los Angeles Co.	33- 3-14	rig	suspended
Cal. Ventura Oil Co., No. 1 Manhattan, Los Angeles Co.	30- 3-14	6,525	suspended
Cal. Ventura Oil Co., No. 1 Hermosa, Los Angeles Co.	31- 3-14	3,396	testing
Cal. Ventura Oil Co., No. 2 Hermosa, Los Angeles Co.	31- 3-14	rig	rigging up
McMahon & McDonald, No. 1 Watts, Los Angeles Co.	12- 3-14	4,665	suspended
Tri-State Oil Co., No. 1 Watts, Los Angeles Co.	12- 3-14	5,032	abandoning
McKeon Drlg. Co., No. 1 Watts, Los Angeles Co.	1- 3-14	....	grading
Rio Grande Oil Co., No. 1 Watson, Los Angeles Co.	17- 4-13	6,295	fishing
Tenacity Oil Co., No. 1 Dominguez, Los Angeles Co.	11- 4-13	8,560	hd. sd. drilling
Shell, No. 1 Van Nuys, Los Angeles Co.	19- 2-15	4,870	redrilling
Rio Hondo Pet., No. 1 Puente, Los Angeles Co.	14- 2-10	3,455	set pipe
Rucker & Smith, No. 2 Puente, Los Angeles Co.	27- 2-10	mtl.	building rig
Bidart Oil Co., No. 1 Puente, Los Angeles Co.	15- 2-10	2,575	hd. sd. drilling
Bardeen Pet., No. 1 Puente, Los Angeles Co.	9- 2-10	4,680	br. sh. drilling
Keck & Hall, No. 1 Puente, Los Angeles Co.	32- 2- 8	1,120	gas—shut in
Marcel Pet. Co., No. 1 Puente, Los Angeles Co.	31- 2- 8	2,900	br. sh. drilling
Celito Oil Co., No. 1 Monterey Park, Los Angeles Co.	25- 1-12	5,278	cemented
Los Gatos Oil Co., No. 1 El Monte, Los Angeles Co.	16- 1-11	1,950	suspended
Olympic Corp., No. 1 Calabasas, Los Angeles Co.	18- 1-17	5,695	fishing
Union, No. 1 Coyote Sansinena, Los Angeles Co.	30- 2-10	4,809	recemented
Western Gulf, No. 1 Brea Canyon, Los Angeles Co.	28- 2- 9	6,588	fishing
Lamona Oil Co., No. 1 Pomona, Los Angeles Co.	34- 1- 9	965	hd. sd. drilling
Graham & Loftus, No. 1 Coyote, Orange Co.	18- 3- 9	6,420	oil sand
Mesa Pet., No. 1 Newport, Orange Co.	21- 6-10	4,910	suspended
Hall, H. L., No. 1 Newport, Orange Co.	20- 6-10	790	suspended
Standard, No. 1 Newport, Orange Co.	26- 6-10	1,990	redrilling
Fidelity Pet. Co., No. 1-A Murrietta, Riverside Co.	23- 7- 3	1,010	cleaning out
Hemet Pet. Co., No. 1 Ward, Riverside Co.	9- 5- 1	3,560	suspended
Imperial Valley Oil Co., No. 1 Brawley, Imperial Co.	36-11-10	3,240	suspended
McGregor Synd., No. 1 Del Mar, San Diego Co.	17-14- 3	1,265	cleaning out
Borderland Oil Co., No. 1 Encinitas, San Diego Co.	12-13- 4	2,519	hd. sd. drilling
Borderland Oil Co., No. 1 Point Loma, San Diego Co.	30-16- 3	3,943	gr. sd. drill'ng
Carr, O. K., No. 1 Capistrano, San Diego Co.	13- 8- 8	4,355	hd. sd. drilling
Grey, H. H., No. 1 Redlands, San Bernardino Co.	25- 1- 2	2,525	fishing
Girard & Grimes, No. 1 Corona, San Bernardino Co.	8- 2- 8	1,549	cemented
Western Gulf, No. 1 Santa Ana, Orange Co.	12- 3- 8	mtl.	idle

IMPORTANT NORTHERN CALIFORNIA WILDCATS

Company, well and location—	S.T.R.	Depth	Status—
Standard, No. 1 Point Conception, Santa Barbara Co.	X- 5-34	5,990	hd. sd. drilling
Universal Consd., No. 1 Pt. Conception, Santa Barbara Co.	30- 5-34	4,680	hd. sd. drilling
Prairie Oil Co., No. 1 Lompoc, Santa Barbara Co.	15- 7-35	5,200	hd. sd. drilling
Fields Gasoline Co., No. 1 Santa Maria, Santa Barbara Co.	8- 9-33	5,010	gr. sd. drilling
Western Gulf, No. 1 Santa Maria, Santa Barbara Co.	5- 9-33	2,040	sd. sh. drilling
Barnsdall, No. 1 Gato Ridge, Santa Barbara Co.	9- 8-32	3,565	sd. sh. drilling
Midwest Oil Co., No. 1 Los Alamos, Santa Barbara Co.	2- 7-33	mtl.	building rig
General Pet., No. 1 Goleta, Santa Barbara Co.	21- 4-28	4,533	shut in
General Pet., No. 2 Goleta, Santa Barbara Co.	21- 4-28	4,350	suspended
General Pet., No. 3 Goleta, Santa Barbara Co.	21- 4-28	1,370	sd. sh. drilling
General Pet., No. 134 Goleta, Santa Barbara Co.	21- 4-28	1,485	suspended
General Pet., No. 136 Goleta, Santa Barbara Co.	21- 4-28	1,016	suspended
General Pet., No. 137 Goleta, Santa Barbara Co.	21- 4-28	1,026	suspended
General Pet., No. 138 Goleta, Santa Barbara Co.	21- 4-28	4,931	suspended
General Pet., No. 139 Goleta, Santa Barbara Co.	21- 4-28	1,035	suspended
General Pet., No. 140 Goleta, Santa Barbara Co.	21- 4-28	1,040	suspended
Boles Oil Co., No. 140 Goleta, Santa Barbara Co.	22- 4-28	1,040	suspended
U. S. Pet., No. 141 Goleta, Santa Barbara Co.	20- 4-28	1,035	suspended
U. S. Pet., No. 142 Goleta, Santa Barbara Co.	20- 4-28	1,032	suspended
U. S. Pet., No. 143 Goleta, Santa Barbara Co.	20- 4-28	1,019	suspended
El Camino, No. 149 Goleta Tideland, Santa Barbara Co.	22- 4-28	1,035	suspended
Bolsa Chica, No. 191 Goleta, Santa Barbara Co.	24- 4-29	1,711	hd. sd. drilling
Caldwell Brown, No. 159 Goleta, Santa Barbara Co.	24- 4-29	1,040	suspended
Cochran, J. H., No. 1 Naples, Santa Barbara Co.	7- 4-29	3,181	sd. sh. drilling
Johnson, George, No. 1 Goleta, Santa Barbara Co.	X- 4-28	3,970	resume work
Wildcat Oil Co., No. 1 Santa Maria, Santa Barbara Co.	20-10-35	5,500	fishing
Pacific Western, No. 1 Gibraltar, Santa Barbara Co.	14- 5-27	2,345	suspended
Shell, No. 1 Summerland, Santa Barbara Co.	18- 4-25	4,404	abandoning
Shell, No. 5 Oxnard, Ventura Co.	14- 2-20	3,192	sd. sh. drilling
Prairie Oil & Gas Co., No. 1 Ventura, Ventura Co.	30- 3-22	7,200	sd. sh. drilling
Rio Grande, No. 1 Lankershim, Ventura Co.	13- 4-19	2,000	redrilling
Associated, No. 1 Rincon Creek, Ventura Co.	19- 4-24	2,080	suspended
Pure Oil Co., No. 1 S. P. Canyon, Ventura Co.	15- 4-21	1,860	sd. sh. drilling
California Republic, No. 1 Sespe, Ventura Co.	23- 4-21	rig	rigging up
Superior Oil Co., No. 1 Sespe, Ventura Co.	14- 4-21	675	redrilling
Lockwood Valley Oil Co., well No. 1, Ventura Co.	32- 8-21	rig	suspended
Nordon Oil Co., No. 1-A Buttonwillow, Kern Co.	7-29-24	4,905	cleaning out
General Pet., No. 1 Belridge, Kern Co.	30-28-21	rig	rigging up
Richfield, No. 1 Belridge, Kern Co.	20-27-20	4,670	sd. sh. drilling
Rio Grande, No. 1 Belridge, Kern Co.	18-28-22	3,680	cleaning out
Shell, No. 1 Belridge, Kern Co.	25-28-20	770	sd. sh. drilling
Wallace, K. C., No. 1 Belridge, Kern Co.	32-29-21	3,660	hd. sd. drilling
Shell, No. 1 Weed Patch, Kern Co.	29-30-29	5,370	new field
Petroleum Securities, No. 1 Edison, Kern Co.	14-29-29	3,580	hd. sd. drilling
Symark Oil Co., No. 1 Edison, Kern Co.	24-29-29	2,130	suspended
Sayre, F. M., No. 1 Edison, Kern Co.	5-30-29	4,220	suspended
Shell, No. 1 Semitropic, Kern Co.	17-27-23	5,980	set pipe
Moran & DeCamp, No. 1 Mojave, Kern Co.	26-10-14	635	hd. sd. drilling
Bardeen, H. A., No. 1 San Emidio, Kern Co.	18-10-23	1,190	suspended
Bardeen, H. A., No. 2 San Emidio, Kern Co.	10-10-23	3,890	hd. sd. drilling
Stabler, W. W., No. 1 Commanche Pt., Kern Co.	4-11-18	2,040	redrilling
Ritchie, J. J., No. 1 Tejon, Kern Co.	33-11-19	3,440	sd. sh. drilling
Wrenn, J., No. 1 Antelope Plains, Kern Co.	32-25-17	812	suspended
Ohio Oil Co., No. 1 Coalinga, Fresno Co.	8-21-15	4,461	sd. sh. drilling
Associated, No. 1 Jacalitos, Fresno Co.	22-21-15	mtl.	building rig
Petroleum Securities, No. 2 Huron, Fresno Co.	28-20-16	7,390	suspended
Panorama Oil Co., well No. 1, San Luis Obispo Co.	7-31-21	4,019	suspended
Latin Amer. Pet., No. 1 Shandon, San Luis Obispo Co.	21-27-15	4,525	suspended
Paso Robles Synd., No. 1 Creston, San Luis Obispo Co.	27-27-11	3,941	cleaning out
Potter, F., No. 1 Atascadero, San Luis Obispo Co.	24-28-12	218	sd. drilling
Pismo Dome Oil Co., No. 1 Edna, San Luis Obispo Co.	5-31-13	2,690	sd. sh. drilling
Union, No. 1 King City, Monterey Co.	8-22- 8	3,250	suspended
Standard, No. 1 King City, Monterey Co.	23-22- 7	5,394	hd. sd. drilling
O'Donnell, J. E., No. 1 Dudley Ridge, Kings Co.	7-23-20	1,635	gas well—idle
Friend & Fiske, No. 1 Tulare Lake, Kings Co.	11-23-19	rig	suspended
Penn Western, No. 1 Tulare Lake, Kings Co.	24-21-18	1,338	suspended
Wellport Oil Co., No. 1 Devils Den, Kings Co.	9-24-17	3,940	suspended
Twin State Oil Co., No. 1 Point Arena, Mendocino Co.	14-12-17	4,516	hd. sd. drilling
Oakdale Oil Co., No. 1 Oakdale, San Joaquin Co.	3- 2-10	3,535	suspended
Orinda Pet., well No. 1, Contra Costa Co.	32- 1- 3	692	sd. sh. drilling
White, Roy, No. 1 Pixley, Tulare Co.	8-23-26	4,022	suspended
Campbell Oil Co., No. 1 Porterville, Tulare Co.	22-22-27	112	sd. drilling
Terra Bella Oil Co., No. 1 Porterville, Tulare Co.	35-22-27	918	testing
Western Oil Co., No. 1 Porterville, Tulare Co.	35-22-27	1,022	testing
Mills & Wilson, No. 1 Porterville, Tulare Co.	35-22-27	910	cemented
Jennings Synd., No. 1 Porterville, Tulare Co.	8-23-28	rig	rigging up
Terra Bella Drlg. Co., No. 2 Porterville, Tulare Co.	34-22-27	920	recemented
Colton Drlg. Co., No. 1 Porterville, Tulare Co.	34-22-27	914	sd. sh. drilling
Rayatt Oil Co., No. 1 Porterville, Tulare Co.	34-22-27	522	sd. sh. drilling
Hallock, William, No. 1 Porterville, Tulare Co.	34-22-27	1,090	set pipe
Kern Pet. Co., No. 1 Porterville, Tulare Co.	34-22-27	rig	rigg'ng up
Larson Oil Co., No. 1 Porterville, Tulare Co.	11-23-27	812	sd. sh. drilling
Buck & Stoddard, No. 1 Porterville, Tulare Co.	2-23-27	mtl.	building rig
Alexander, Ford, No. 1 Porterville, Tulare Co.	34-22-27	1,000	suspended
Lewis, Paul M., No. 1 Porterville, Tulare Co.	15-22-27	748	sd. sh. drilling
Turk & Campbell, No. 1 Porterville, Tulare Co.	34-22-27	rig	rigging up
Colusa Oil Co., No. 1 Bush, Colusa Co.	31-15- 4	690	hd. sd. drilling
Getty Oil Co., No. 1 Nigger Heaven, Yolo Co.	28-12- 3	1,010	sd. sh. drilling

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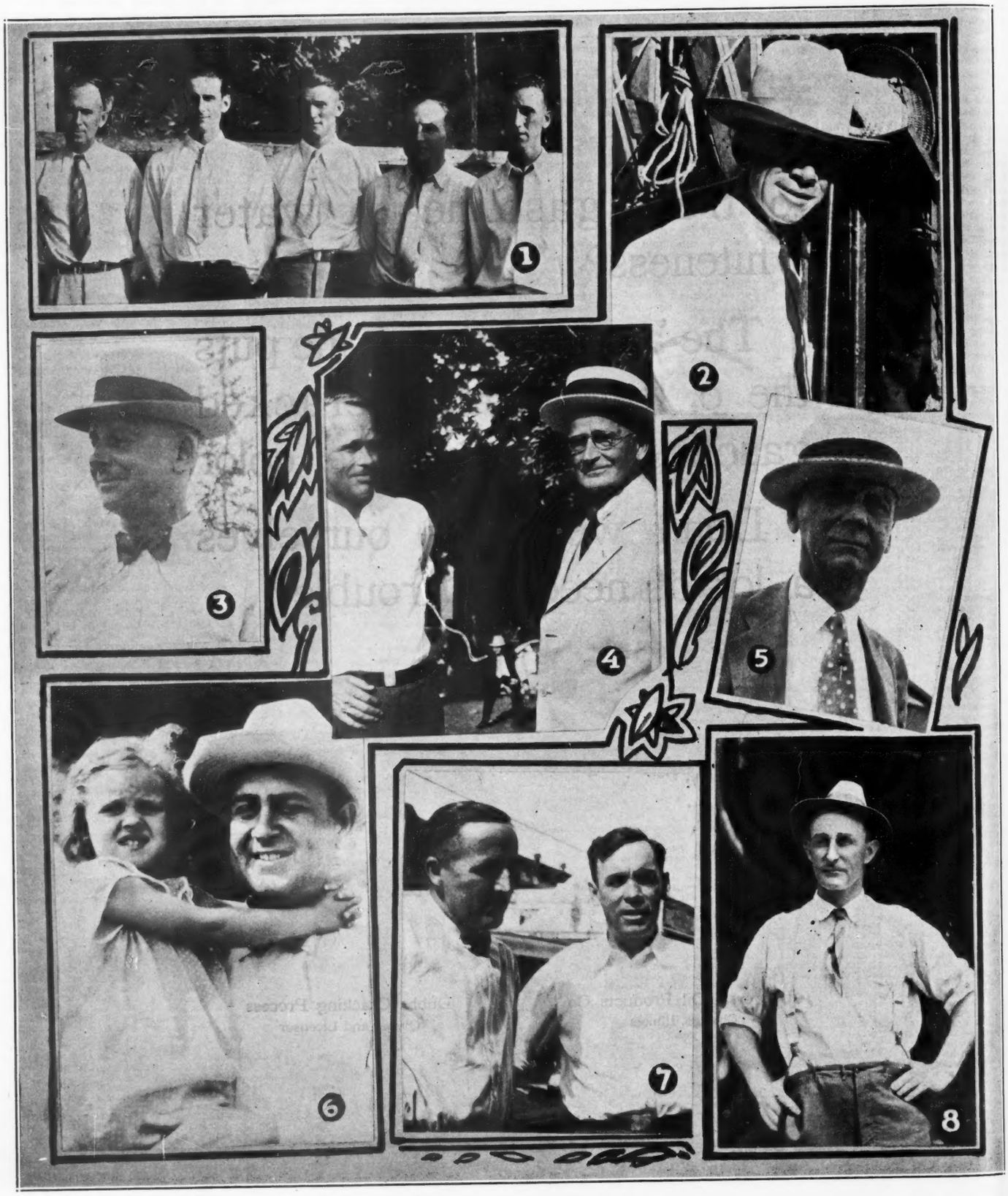

1—Left to right: W. E. Sowles, district gas man, Breckenridge, Tex.; Earl McClure, production foreman, Breckenridge; W. V. McArthur, production superintendent, Pampa, Tex.; G. E. Sweeney, production superintendent, Big Spring, Tex., Sun Oil Co. 2—U. E. Byers, Union-Gulf Pipe Line Co. 3—A. A. Goodman, assistant production superintendent, Pure Oil Co., Van Field, Texas. 4—Jack Pew, land department, Sun Oil Co., Dallas, Tex., and J. Edgar Pew, his father, first vice president, Sun Oil Co., Philadelphia. 5—J. H. Duff, legal department, Pure Oil Co., Fort Worth, Tex. 6—B. Y. Jackson, engineer, Pure Oil Co., Van Field, Texas, and Valeria Ann Jackson. 7—Jack Hesterby, land man and scout, Louisiana Oil Refining Co.; and Paul Madden, land man and scout, Republic Production Co., Tyler, Tex. 8—J. B. Northrop, refinery superintendent, Ohio Valley Refining Co., St. Marys, W. Va.

Northern Ector Is Holding Attention

University Board Considering Sale in Andrews County. First Unit Plan to Be Tried in Schleicher County

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Sept. 15.—Northern Ector County continues to hold the attention of all company men and independents operating in West Texas, although the well which created the new furore for the district is not making any great amount of oil. This well belongs to the Southern Crude Oil Purchasing Co. and is located in the NW Section 26, Block 43, Township 1n, T.&P. Survey, about 19 miles north of the Penn Pool.

Last week the well topped the main pay at 4,130-35 feet, and the hole started filling with oil, later slopping over and flowing by heads. Since September 8 it has made the following gauges: September 9 it flowed 77 bbls. in 12 hours; September 10 made 281 bbls. in 24 hours; September 11 made 273 bbls.; September 12 flowed 275 bbls.; September 13 flowed 256 bbls.; September 14 flowed 289 bbls., and September 15 flowed 263 bbls. Total depth is 4,244 feet.

No plans have been made for completing the well, and five 500-bbl. tanks have been erected, and one 10,000-bbl. tank has been ordered. Only ideas have been advanced as to what the company will do about building a pipe line to the new area. One possible plan is to lay a line to the company's large tank farm at Wickett where it has a large loading rack, and from which it ships out Winkler crude oil to refineries in Louisiana, and another plan conceives a line to a loading rack on the Texas & Pacific Railroad about 16 miles south from which place the oil could be loaded out on tank cars.

The company has about 5,000 acres surrounding the well, with the outlying acreage being cut up in smaller leases and belonging to various independents and companies. Southern Crude may bide its time until another company or independent drills in a nearby producer to prove more acreage for production, and may then definitely decide to run a line to the area. It is hardly possible the company will offset the well in the near future, but will wait some time for state-wide proration to help adjust overproduction in Texas, and for the industry to become more stabilized. Developing another pool in West Texas at this time does not seem the most plausible thing to do, and Southern Crude Oil Purchasing Co. probably does not need the oil at this time, and will save developing its leases as it sees fit, and as its refineries demand more oil.

Andrews County

Fuhrman Petroleum Co.'s No. 1 Ford in Section 16, Block A-43, in Andrews County, about 16 miles northwest of the Southern Crude discovery, is still shut down at 4,155 feet for 5½-inch casing making the same amount of gas around 26,000,000 feet.

The Shell Petroleum Corp. purchased a half interest in the strip which runs from Sections 2 and 3 in Block 10, south of the Fuhrman gasser, east to Sections 3 and 4 in Block 9. This acreage totals 262 acres.

The board for lease of University of Texas lands has put out a letter rather in the form of a "feeler" to find out what the companies thought about the sale of university land in Block 9, between the Fuhrman gasser and the Southern Crude Oil Purchasing Co.'s new discovery, the former in southern Andrews and the latter in northern Ector. It would seem that at this time such a sale of lands which have potential producing possibilities would only add to the chaotic condition of the industry in Texas, especially if the land was proven as capable of producing, and several companies and independents purchased it and commenced rapid drilling as might possibly be expected.

General proration has tended to bring down production in the State, but if more land is to be thrown open to exploration, exploitation and production it would seem that general proration would not be given a fair trial.

Howard County Wells

The Magnolia Petroleum Co.'s No. 1 Kelly-Schalk in Section 124, Block 29, W.&N.W. Survey, Howard County, in the heart of the shallow pool on the east side of the Howard County fields, is now shut down at 2,990 feet. The first day on pump it made 234 bbls. through 2-inch tubing and the second day made only 98 bbls. The well was formerly completed in 1927 in the shallow pay, around 1,200 feet, for a 16-bbl. well, and on drilling deeper it topped the deep pay at 2,885 feet.

Sinclair Oil & Gas Co.'s No. 1 Dodge estate, on the eastern side of Howard County, near the Mitchell County line, and an extension to Mitchell County production, which was completed a few weeks ago for around 150 bbls., is now drilling deeper at 2,720 feet in lime, carrying about 1,500 feet of oil from 2,640 feet. An increase in oil was struck at 2,660 feet.

Unit Plan in West Texas

The Eastland Oil Co. and others are to drill the first unit plan test ever made in West Texas. Carl Cromwell has contracted to drill the well for the owners and is to spud the test by October 1. It is to be located in the center of Section 29, Block M, G.H.&S.A. Survey, on the Joe Tisdale ranch. An 8-inch hole is to be maintained to 4,500 feet so as to allow deeper drilling if so desired by the owners. This will be an interesting test from the standpoint of unit ownership in this district, and also from the standpoint of its location, for Schleicher County is one of the many counties of this district which have had good oil shows, and in which many are confident of production being found in commercial quantities. Much acreage has been purchased in the county and in neighboring counties during the past few months, and if the oil industry was in a better condition this part of the district would no doubt get a thorough testing by many wildcats being drilled.

Irion County Pool

The shallow pool of Irion County was extended appreciably to the south when J. E. Bristow and others' No. 1 Nutt in Section 6, Gonzales County School Lands Survey, topped the sand pay at 1,459 feet and was shut down at 1,465 feet to underream 5-inch casing from 1,437 feet to shut off a small amount of water. It swabbed 16 bbls. of oil in two hours and flowed 20 bbls. in one and one-half hours on September 14. The well is estimated good for about 60 bbls. on the pump, and will help to build up the gradual growth of the daily output which is being shipped out via tank car from a loading rack on the Santa Fe railroad near Mertzon.

Taylor County Area Defined

The Taylor County producing area was defined to the north this week when the Laurel Oil & Gas Co.'s No. 1 Bingham, 2 miles north of Dunigan and Shell Petroleum Corp.'s No. 1 French discovery, was abandoned at 2,501 feet as dry. It was in Section 31, Guadalupe County School Lands Survey.

The Adams-Ferguson-Hobbs' No. 1 Lowe area, to the south of the above mentioned area in Taylor County, is selling 100 bbls. of oil per day to the Abilent Refining Co., which is a small refinery having a capacity of around 200 bbls. per day. The Dunigan well is pumping 85 bbls. of oil per day with 7 bbls. of water. The Lowe area has 7,000 bbls. of oil in storage from the three wells which are allowed to make only 10 bbls. of oil per day each. On September 1 the Dunigan well had put 10,670 bbls. in storage.

Loving County gained a good producer this week when the California Co.'s No. 2 Reagan and McIlvain in Section 84, Block 1, W.&N.W. Survey, flowed 325 bbls. in 12 hours after shooting with 150 quarts from 4,185 feet to 4,224 feet. Elevation is 2,686 feet. The well is one of the best in the Wheat Field.

WILDCAT OPERATIONS IN WEST TEXAS

Week Ended September 15

Company, well, farm name, section and block—	Remarks—
ANDREWS COUNTY	
Deep Rock Oil Co. et al's No. 1 Mathis, 900 ft. from S and W, Sec. 4, Blk. A-46, Public School Land	Flowing 10 bbls. per day; total depth 5,088 ft.
Deep Rock Oil Co.'s No. 1 Miles, 900 ft. S, 1,650 ft. E of NW cor., Sec. 22, Blk. A-46, School Land	Shut down 4,765 ft.
Fuhrman Pet. Corp.'s No. 1 Ford, 440 ft. from S and 2,200 ft. from W of Sec. 16, Blk. A-43, Public School Land	Shut down 4,155 ft.
Deep Rock Oil Co. et al's No. 1 King, 330 ft. from N and 2,310 ft. from E, Sec. 11, Blk. A-46	Top pay 4,335 ft.; flows every 4 days; temporarily abandoned; total depth 4,454 ft.
Maer & Staniforth's No. 1 Meador, C SW, Sec. 8, Blk. A-41	Shut down 4,501 ft.
R. R. Penn's No. 1 Wilson, C, Sec. 20, Blk. A-37, School Land	Shut down 4,775 ft.; makes small flow from 3,085 ft. every 2 or 3 days.
BREWSTER COUNTY	
Brewster Oil Co.'s No. 1 fee, 2,640 ft. S and 2,598 ft. E of NW cor., Sec. 45, Blk. G-15, G.C.&S.F. Sur.	Shut down 1,935 ft.
E. L. Chapman's No. 1 Skinner, C SW SE, Sec. 100, Blk. 2, G.C.&S.F. Sur.	Shut down 1,302 ft.
Trans-Pecos Oil & Gas Co.'s No. 1 Jones, 920 ft. from N and 2,500 ft. from E of Sec. 18, Blk. G-15, G.C.& S.F.R.R. Sur.	Shut down 2,510 ft.
Van McPhail's No. 1 McIntyre, SE cor., Sec. 59, Blk. 352, 7 mi. S of Alpine	Shut down 1,750 ft.
COKE COUNTY	
Arkansas Fuel Oil Co.'s No. 1 Stepp, 1,020 ft. NE, 2,340 ft. W of SE cor., Sec. 35, Blk. 1-A, E.&T.C. Sur.	Underreaming 4,315 ft.
CONCHO COUNTY	
Beesley et al's No. 1 S. Waring Est., 1,320 ft. from S and E of A. T. Robinson Sur., Abst. 2,120	Spudded and shut down.
Turner et al's No. 1 Borsig, 150 ft. from S of NE cor., G. Emmig Sur. 130, 6 mi. W of Paint Rock	Shut down 1,550 ft.
CRANE COUNTY	
Cranfill Bros. and Gulf's No. 1 J. B. Tubb, 2,310 ft. from N and 330 ft. from E of Sec. 8, Blk. B-37, Public School Land	Drlg. 4,055 ft.
Cranfill Bros.' No. 1 Muir, 330 ft. from N and 2,310 ft. from W, Sec. 23, Blk. B-27, Public School Land	Shut down 650 ft.; top salt 485 ft.
C. C. Duffey's No. 1-C Cowden Bros. & Co., 2,640 ft. from S and 3,960 ft. from W of Juan Cordona Sur.	Drlg. 3,035 ft.
CROCKETT COUNTY	
Dixie Oil Co. and Amerada's No. 2 Powell, 258 ft. N and 2,349 ft. W of NE cor. of Sec. 42, T.C. Ry., but located in Sec. 52, Blk. BB	Drlg. 2,200 ft.
Doleman & Moore's No. 1 Perner, 3,135 ft. from N and 1,485 ft. from E of Sec. 36, Blk. 2, I.&G.N. Sur.	Spudded and shut down.
Magnolia Pet. Co.'s No. 2 Hoover, 2,310 ft. from S and 335 ft. from E of Sec. 2, Blk. FF, B.&B. Sur.	Drlg. 1,525 ft.
CULBERSON COUNTY	
Grisham & Hunter's No. 2 Garren, 2,475 ft. from S and 1,566 ft. from E, Sec. 20, Blk. 89, Public School Land	Shut down 1,520 ft.; show oil 1,400-15 ft.

(Continued on Page 112)

WEST TEXAS PRODUCTION
Week Ending September 13

County—	No. wells	Bbls.
Andrews	2	130
Crane	364	30,465
Crockett	49	1,775
Ector	65	7,890
Fisher	8	1,883
Garza	5	None
Howard-Glasscock	524	22,690
Irion	6	144
Jones	73	1,340
Loving	25	1,676
Mitchell	147	2,184
Pecos	495	107,050
Reagan	253	22,400
Runnels	3	10
Scurry	5	11
Taylor	3	72
Upton	251	7,485
Ward	37	2,760
Winkler	596	68,045
Total production this week		278,010
Total production last week		277,037
Increase		973

Runs Through Trunk Lines

Company, size, location—	Bbls.
Atlantic, 10-inch, Houston	23,488
Gulf, 10-inch, Ranger	35,766
Humble, 2-8-inch, San Angelo	38,281
Humble, 10-12-inch, Station "A"	31,129
Illinois, 2-8-inch, Del Rio	30,756
Magnolia, 8-inch, De Leon	22,622
Pasotex, 8-inch, El Paso	13,098
Shell, 10-inch, Healdton	36,432
Shell, 10-inch, Houston	27,991
Texas, 12-inch, Houston	20,222
Total	279,784

Runs to West Texas Refineries

Amarillo Ref. Co., Pyote	None
Big Spring Ref. Co., Big Spring	402
Burford Ref. Co., Pecos	3,580
Bluebonnett Ref. Co., Wickett	None
Cosden Ref. Co., Big Spring	3,771
Col-Tex Ref. Co., Colorado	6,500
Great Western Ref. Co., Big Spring	2,663
Humble Oil & Ref. Co., McCamey	262
Richardson Ref. Co., Big Spring	594
Tonkawa Ref. Co., Pyote	1,397
Wickett Ref. Co., Wickett	160
Total	24,329

Tank Car Shipments

Fox & Thorsen from Mertzon	145
Thomas & Brann from Grant City	None
Orient from Hurdle	85
Reagan County Pur. Co. from Texon	323
American from Pyote	8,249
Southern Crude Pur. from Wickett	11,744
Total	20,546
Total daily average distribution	324,659
Total daily average production (including Lea County, New Mexico)	319,331
Daily average from storage	7,328

COMPLETIONS IN WEST TEXAS

Ector County

Cosden Oil Co.'s No. 5-B University, top pay 3,552 feet, initial production 518 bbls. after a 150-quart shot from 3,552-3,660 feet, total depth 3,672 feet. Sun Ray Oil Corp. and Llano Oil Co.'s No. 1

(Continued on Page 76)

Panhandle Production Cut 12,000 Bbls.

Semiwildcat in Archer County Showing for 50 Bbls. Biggest Well of Week in Brazos River Bed, Young County, 500 Bbls.

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Sept. 15.—Probably one of the most interesting and surprising incidents of the week in the Panhandle district was the decrease of over 12,000 bbls. per day in the district's production, this week's daily average falling to 84,384 bbls. from 96,541 bbls. of the previous week. The Wichita Falls district also showed a drop in production, but not as marked as the Panhandle district. The Wichita district dropped to 87,711 bbls. from 92,366 bbls. of the previous week, a decrease of 4,655 bbls., and the Ranger or West Central Texas district showed a drop of 1,630 bbls. from 28,436 bbls. to 30,066 bbls. of the previous week.

As purchasing companies have not been cutting their runs voluntarily in the Panhandle district as in the Wichita Falls and Ranger district, it stands to reason that general proration must be having some effect on the former district, curtailing activities to a minimum, for but few locations and completions were recorded in the district this week compared with many each week during the past few months.

In the Wichita Falls and Ranger districts voluntary curtailment in purchases by the companies serving these districts has cut production to a minimum, several of the counties being cut to the marginal limit on all wells. The last cut made by the Prairie Oil & Gas Co. in all counties in these districts being served by its lines, brought all wells down to 12 bbls. regardless of their potential, and a late report stated that the Continental Oil Co. had cut its runs to 30 per cent.

Archer Semiwildcat

A semiwildcat was in the making in Archer County this week when Hickernell and others topped a sand at 1,101 feet and drilled 6 feet in, the test showing good for around 50 bbls. per day. It is on the J. H. Turbeville farm in Block 62, Jefferson County School Lands, about three-quarters of a mile northeast of the old Major Pool. Drilling in of this test will bring other tests and the extension will mean further drilling and possible production to the area.

The Blake and Harmon area in the J. Bell Survey, Block 5, Clark and Plumb Survey, Archer County, which was opened about two weeks ago by a discovery on the Bell ranch received a setback when Brownlee and others' test northeast of the discovery bailed water in the sand at 1,140-44 feet. The well will be drilled deeper, but chances for it making a producer look rather slim at this writing.

Wolfe and Long's No. 2 State Land in the Brazos River Bed, Young County, was completed as the biggest well of the week when it came in for 500 bbls. at a total depth of 2,500 feet. Top of the pay was struck at 2,466 feet. The well is now prorated to 12 bbls. per day.

Coleman County Well

The Arcadia Refining Co. and others' No. 1 Golson, Coleman County, which was completed last week for an extra good well from the Cross Cut sand is still without pipe line connection flowing 230 bbls. per day through a one-quarter-inch choke against 100 pounds back pressure. This well is in the I. K. Harris Survey, 1 mile south of Burkett, and created a new acreage play in the vicinity of the town and well when it topped the pay sand. All available within a radius of 2 miles around the town and well has been taken, most of it bringing extraordinarily high prices.

South of Santa Anna in Coleman County, Jake Hammon's No. 1 Wells in Block 15, M. Martinez Survey, encountered gas estimated at 1,000,000 feet in black lime from 2,185-2,223 feet where the gas was ignited and the rig damaged. It is understood about 50,000 feet of this gas will be used to repressure in the Fry Pool and the Coleman Gas & Oil Co. has been offered the remainder.

The Overall Pool, Coleman County, produced 400 bbls. and has produced a grand total to September 1 of 569,605 bbls. This does not include Atlantic Oil Producing Co.'s "B" lease which is making 60 bbls. per day.

The Stewardson Pool in the same county is producing around 350 bbls. per day, and the Eastland Pool is producing 745 bbls. from 59 wells.

NORTH TEXAS PRODUCTION
Week Ending September 13

Panhandle district—	Bbls.
Carson County	7,490
Hutchinson County	17,115
Gray County	58,725
Moore County	410
Potter County	11
Wheeler County	633
Total production this week	84,384
Total production last week	96,541
Decrease	12,157
Wichita Falls district—	
Archer County	14,515
Baylor County	865
Clay County	725
Cooke County	3,125
Foard County	162
Jack County	2,877
Haskell County	51
Montague County	6,519
Throckmorton County	696
Wilbarger County	18,879
Wichita County	25,180
Young County	14,117
Total production this week	87,711
Total production last week	92,366
Decrease	4,655
Ranger district—	
Brown County	5,713
Callahan County	3,092
Coleman County	2,881
Comanche County	1,121
Palo Pinto County	544
Eastland County	4,424
Shackelford County	5,270
Stephens County	5,391
Total production this week	28,436
Total production last week	30,066
Decrease	1,630

COMPLETIONS IN RANGER DISTRICT

Coleman County

Arcadia Refining Co. and others' No. 1 Golson, top pay 1,576 feet, initial production 223 bbls. of oil per day on one-quarter-inch choke and 100 pounds back pressure, total depth 1,577½ feet. Shields, Pierce and others' No. 1 Martin, dry and abandoned, total depth 1,358 feet. Breeding and others' No. 1 Barker, dry and abandoned, total depth 704 feet.

Callahan County

Beams and others' No. 2 Jackson, top pay 1,189 feet, initial production 15 bbls. of oil and 9 bbls. of water, total depth 1,192 feet.

Comanche County

Lone Star Gas Co.'s No. 1 Dunn, total depth 2,865 feet, plugged back to 2,834 feet, shot with 140 quarts from 2,782-2,834 feet, initial production 2,190,000 feet of gas with 370 pounds rock pressure. J. E. Whiteside's No. 1 E. A. Whitesides, dry and abandoned, total depth 2,766 feet.

Eastland County

McLester Oil Co. and other's No. 1 Exall, top pay 1,897 feet, initial production 5 bbls. of oil and 500 bbls. of water, total depth 1,923 feet.

Palo Pinto County

Lone Star Gas Co.'s No. 1 Watson, total depth 4,519 feet, plugged back to 3,730 feet, initial production 80,000 feet of gas from sand at 3,725-28 feet, 650 pounds of rock pressure. Wickens and others' No. 1 Rings, location abandoned.

COMPLETIONS IN PANHANDLE DISTRICT

Carson County

Empire Gas & Fuel Co.'s No. 26 Burnett, initial production 29,000,000 feet of gas from 2,358-2,563 feet, total depth 2,563 feet. Red River Gas Co.'s No. 4 Bivins, initial production 20,000,000 feet of gas from 2,425-2,590 feet, total depth 2,697 feet. Texas Interstate Pipe Line Co.'s No. 1 Bennett (Section 6), initial production 9,000,000 feet of gas from 2,575-2,820 feet, total depth 2,854 feet.

Gray County

Lefors Petroleum Co.'s No. 4 Shaw, initial production 4,000,000 feet of gas from 2,425-2,500 feet, total depth 2,680 feet. Lefors Petroleum Co.'s No. 1 Wilson, dry and abandoned, total depth 2,882 feet. Cockrell-McIlroy's No. 7 Castleberry, top pay 3,255 feet, shot 250 quarts from 3,255-87 feet, initial production 596 bbls., total depth 3,287 feet. Cockrell-McIllroy's No. 4 Sailor, top pay 3,175 feet, shot 200 quarts 3,176-3,218 feet, initial production 364 bbls., total depth 3,220 feet. Danciger Oil & Refining Co.'s No. 2 Bradford, top pay 2,500 feet, initial production 35,000,000 feet of gas, total depth 2,668 feet. Magnolia Petroleum Co.'s No. 5 Harrah, top pay 3,135 feet, initial production 75 bbls., total depth 3,250 feet. McIllroy Oil Co.'s No. 3 Archer, top pay 3,160 feet, shot 200 quarts 3,160-3,220 feet, initial production 400 bbls., total depth 3,220 feet. Mid-west Exploration Co.'s No. 2 Bowers, top pay 3,179 feet, initial production 1,800 bbls. in 17 hours, total depth 3,186 feet. Humble Oil & Refining Co.'s No. 7 Combs and Worley, top pay 2,743 feet, initial production 15,000,000 feet of gas and 1,500 bbls. oil, total depth 2,820 feet. Phillips Petroleum Co.'s No. 2 Bowers, top pay 3,280 feet, plugged back to 3,285 feet, initial production 40 bbls., total depth 3,287 feet. The Texas Company's No. 2 Brown, top pay 3,142 feet, shot 100 quarts from 3,142-3,242 feet, initial production 80 bbls., total depth 3,242 feet.

Hutchinson County

Holmes and others' No. 3 Quinn shot 140 quarts from 3,005-95 feet, initial production 500 bbls. (potential production), actual gauge 270 bbls. first six hours, total depth 3,105 feet. Phillips Petroleum Co.'s No. 1 Pease, junked and abandoned, total depth 945 feet. Smith & McDaniel's No. 2 Pitcher, top pay 3,040 feet, initial production 170 bbls., total depth 3,155 feet. The Texas Company's No. 6 Moore, top pay 3,020 feet, initial production 75 bbls., total depth 3,110 feet.

Moore County

Texas Interstate Pipe Line Co.'s No. 1 Sneed, Jr. (Section 45), shot 170 quarts from 2,551-2,645 feet, initial production 9,000,000 feet of gas, total depth 2,695 feet.

Wheeler County

Johnson and others' No. 2 Hicks (Hall), top pay 1,810 feet, initial production 16,500,000 feet of gas, total depth 1,916 feet. Prince & Adam's No. 3 Burcham, temporarily abandoned.

COMPLETIONS IN NORTH CENTRAL TEXAS

Archer County

Bridwell Oil Co.'s No. 1 Green, initial production 12 bbls.; total depth 1,171 feet. R. J. Brown's No. 1 Webb, location abandoned. Elizey and Crowell's No. 1 Hayter, dry and abandoned; total depth 1,406 feet. Golding and Cochran's No. 7 Kunkel, oil sand 1,130 feet; initial production 7 bbls.; total depth 1,144 feet. King and Hay's No. 1 Morehead estate, dry and abandoned; total depth 1,130 feet. Krugell and others' No. 2 Layster, oil sand 1,195-1,200 feet; initial production 18 bbls.; total depth 1,200 feet. C. E. Litchfield's No. 1 Richardson, dry and abandoned; total depth 1,216 feet.

Clay County

Mid-Continent Oil Corp.'s No. 7 Stine and others, oil sand 1,744-59 feet; initial production 30 bbls. oil; total depth 1,759 feet.

Montague County

United Producers Petroleum Co.'s No. 1 Haward, dry and abandoned; total depth 1,806 feet.

Wilbarger County

Lewis Production Co.'s No. 10 Waggoner, dry and abandoned; total depth 1,836 feet.

Wichita County

Arkansas Fuel Oil Co.'s No. 32 Kemp and Kempner, oil sand 1,660-72 feet; initial production 5 bbls. oil; total depth 1,672 feet. Frank Baldwin's No. 1 Honaker, dry and abandoned; total depth 1,050 feet. John O'Neil's No. 3 Honaker, oil sand 1,002-10 feet; initial production 6 bbls.; total depth 1,010 feet.

Young County

Akin and Rayzor's No. 1 Deitrich, oil sand 1,090-1,102 feet; initial produc-

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WILDCAT OPERATIONS IN TEXAS PANHANDLE

Week Ending September 15

CARSON COUNTY

Company, well, farm name, section and block—	Remarks—
Empire G. & F. Co.'s No. 1 Sims, 2,310 ft. N, 990 ft. E, N½, Sec. 12, Blk. 7, I.&G.N. Sur.	Location.
Empire G. & F. Co.'s No. 1 McConnell, C S½ SW, Sec. 66, Blk. 4, I.&G.N. Sur.	Rig.
North American Oil Co.'s No. 1 Burnett, C NW, Sec. 97, Blk. 4, I.&G.N. Sur.	Drlg. 2,120 ft.
North American Oil Co.'s No. 1 Burnett, C SE, Sec. 98, Blk. 4, I.&G.N. Sur.	Drlg. 1,840 ft.
Reiger & Steckoll's No. 1 Martin, 330 ft. N and W, SW, Sec. 90, Blk. 7, I.&G.N. Sur.	12,000,000 ft. gas 2,815-2,910 ft; drlg. 3,520 ft.
Shamrock O. & G. Co.'s No. 1 Duncan, 330 ft. S and W, NE, Sec. 5, Blk. 7, I.&G.N. Sur.	S.D. 3,380 ft.
Sweeney et al's No. 1 Locke, 164 ft. N and W 40-ac. tr. along R.R. in Sec. 57, Blk. 7, I.&G.N. Sur.	S. D. 1,000 ft.
Texas Interstate P. L. Co.'s No. 1 Burnett, C SW, Sec. 6, Blk. 5, B.&B. Sur.	Drlg. 2,650 ft.

CHILDRESS COUNTY

C. L. Sloane et al's No. 1 B. P. Smith, Sec. 49, F. P. Knott lands	T.D. 5,000 ft.

COLLINGSWORTH COUNTY

Dixon et al's No. 1 Bell, 330 ft. N, 1,320 ft. W, Sec. 102, Blk. 21, H.&G.N. Sur.	Building rig.

DONLEY COUNTY

Blue Bonnett Oil Co.'s No. 1 Ball, 1,075 ft. N line, 985 ft. E line, Sec. 22, Blk. E, D.&P.R.R. Sur.	T.D. 3,006 ft; contract depth.

GRAY COUNTY

Amalgamated German-American Oil Co.'s No. 1 Webb, 330 ft. S and W, E½ NW, Sec. 12, Blk. A-9, H.&G.N. Sur.	Fishing 2,000 ft.
Anderson & Bean's No. 1 Thompson et al, 330 ft. S and W, NW, Sec. 126, Blk. 3, I.&G.N. Sur.	Set 8-in. csg. 2,586 ft.

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RUSK COUNTY WELL MAY BE WOODBINE BUT NEW POOL MAY PROVE A PROBLEM

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Sept. 15.—C. M. Joiner and associates' No. 1 Mrs. Daisy Bradford test in the Juan Ximenes Survey, central Rusk County, which attracted much attention last week when it made a good showing of high gravity oil on a drill stem test, still stands shut down at 3,594 feet waiting on sufficient casing to run to the bottom of the hole before another test is made, and the well drilled in. Three 500-bbl. tanks have been set up for storage, and casing was being moved in during the week.

Geologists and paleontologists are of the belief that the sand encountered is the Woodbine, and the test looks as if it has a splendid chance of making a discovery well for this area, but due to the condition of many titles on land surrounding the well, many companies and individuals are rather wary of making lease purchases, consequently trading hasn't been as brisk as it might have been if the test had been located elsewhere. However, the Arkansas Fuel Oil Co., Vacuum Oil Co., Republic Production Co., Sun Oil Co., Phillips Petroleum Co., Simms Oil Co. and a few independents have purchased a considerable amount of acreage nearby, and other deals will be closed as titles are cleared on much of the land.

In case the well does prove to be another Woodbine discovery for East Central Texas it will undoubtedly create a big problem in the general proration scheme of Texas, which is just now getting well under way and being tried out in all of the producing areas of the State. The problem will be caused by many different lease holders, who will probably all want to drill to test their acreage and obtain production of this high gravity sweet oil which tests 38.0 degrees, and which should be in great demand, partly because of being situated as it is, not far distant from the Gulf Coast with several lines which traverse the State and area near the test. The Gulf Pipe Line Co. has a line running through this section from Oklahoma to the coast, cutting through within a few miles of the well, but possibly would not connect with the new area. Another Gulf line runs from Louisiana to the Texas coast, passing within a few miles of the well, and there is the possibility that this line might run some of the oil from the Joiner area, or some of the other lines over the Texas-Louisiana state line might extend a line to take oil from this area.

East Central Texas Production

Daily average production for the pools in the East Central Texas area for the week ending September 13 follow:

Boggy Creek	3,660
Cedar Creek	40
Currie	295
Hill County	35
Mexia	4,115
Minerva	545
Nigger Creek	140
Powell	5,351
Richland	105
Thrall	41
Van	26,225
Wortham	640
Total East Central Texas	41,192
Week ending September 6	40,758
Increase	434

Van Pool Extension

George Anderson's No. 1 Sanger, in the northwest corner of the Humble Oil & Refining Co.'s 200-acre Sanger lease, Van Zandt County, came in as a good well this week, making 472 bbls. in 24 hours on a quarter-inch choke at a total depth of 2,927 feet, thereby extending the eastern side of the Van Pool a considerable distance. This well is outside of the Unit Plan No. 1, and in an area which now has two derricks, two drilling wells, one completion and nearby offsets being cleared for other locations. The area lies practically midway between the Van Pool proper and the Carroll district, which was opened some weeks ago by the Humble Oil & Refining Co.'s extension well in the southeast corner of the Carroll 95-acre farm in the William Daniel Survey.

The Anderson well is flowing into steel storage erected to accommodate the well, for there is no gathering system connected to it, but the Humble Oil & Refining Co. claims title to the strip, has an injunction against Anderson and suit will be held in the next term of court to decide definite ownership.

One thousand feet north of the Anderson well, Broderick & Calvert will soon complete their No. 1 M. F. Shirley in the John Walling Survey. This topped the Woodbine sand at 2,755 feet and casing was set at 2,764 feet. As soon as the cement sets this well will be drilled in to complete still another extension to the northeast towards the outlying district about 5,000 feet, where there are now four producers.

May Limit Carroll District

The Texas Company's No. 2 Carter, an east offset to its No. 1 Carter, a producing well in the southwest corner of the G. W. Carter 171-acre lease in the William Daniel Survey, Van Zandt County, has not been completed up to the present writing, and is coring at 2,985 feet in Woodbine sand, which was topped at 2,961 feet, far below where the Woodbine was contacted in the west offset well. No. 2 test looks as if it would make a well, but only a small one, thereby setting the northeastern limits of the Carroll district of the Van Pool.

Another well, one on the northern outskirts of the Van Pool, Jenkins and others' No. 1 V. T. Davis, in the southeast corner of the Davis 139.8-acre tract in the Nacogdoches County School Lands Survey, is about due for completion. It is down 2,917 feet, which is the top of the Woodbine sand. This well will make a 2,000-foot northern extension to the Van Pool.

C. L. Kolp and others' No. 1 Mathews in the Willis H. Bruce Survey, 2 miles west of Van Pool production, has been abandoned as a dry hole at a total depth of 3,637 feet.

Another interesting test for Henderson County has been announced. La Rue, the Gulf Production Co. and the Texas State Oil Co. will drill this test on a 20-acre farm belonging to T. H. Skinner. The farm is located in the J. Henshaw Survey about 5 miles north of Athens. The area is considered as one of the most likely on the western side of the East Texas basin, and all companies and operators will watch the test closely.

COMPLETIONS IN EAST CENTRAL TEXAS

Week Ending September 13

Morris County

Leonard Petroleum Co.'s No. 1 Staggers, top Pecan Gap 2,512 feet, dry and abandoned, total depth 3,041 feet.

Navarro County

Gilliam and Phillips No. 1 Mrs. L. M. Wilson, top Woodbine sand 1,991 feet, dry and abandoned, total depth 3,167 feet.

Van Zandt County

Hill and Hill's No. 1 Maxfield heirs, abandoned, location. C. L. Kolp and others' No. 1 Mathews, Pecan Gap 2,085-2,190 feet, dry and abandoned, total depth 3,637 feet. Pure Oil Co.'s No. 1 L. D. Miller, initial production 192 bbls. on six-sixty-fourths-inch choke, total depth 2,956 feet. Same company's No. 1 W. E. Morris, initial production 155 bbls. on twelve-sixty-fourths-inch choke, total depth 2,933 feet. Same company's No. 5 A. D. Clark, initial production 160 bbls. on five-sixty-fourths-inch choke, total depth 2,942 feet. Same company's No. 1 J. E. Crumbie, initial production 111 bbls. on five-sixty-fourths-inch choke, total depth 2,936 feet. Van Joint Account's No. 2 W. E. Morris, initial production estimated 300 bbls. on twelve-sixty-fourths-inch choke, total depth 2,938 feet. George Anderson's No. 1 Sanger, top Pecan Gap 1,590 feet, base 1,694 feet, sand 2,756-62 feet, flowed 60 bbls. in 15 minutes through casing; 1,655 bbls. in 13 hours; total depth 2,927 feet.

EAST CENTRAL TEXAS WILDCATS

Week Ending September 15

DELTA COUNTY

C. A. Evert's No. 1 Smith, 300 ft. N and 150 ft. W of 38-ac. tract, 3 miles NE of Cooper in J. U. Ranfro Sur. ..... Reaming 2,175 ft.
Keane-Goldman et al, one-half mile N of Cooper ..... Drlg. 3,315 ft.

FANNIN COUNTY

North American Pet. Co.'s No. 1 Allen, 700 ft. N and 150 ft. W in N. R. Broadfoot Sur., 9 miles N of Honeygrove ..... Shut down 1,400 ft.
E. M. Rogers' No. 1 McSwain, 300 ft. S and E of Michael Daly Sur., in Juana Telgando Sur., 1½ miles NE of Lomasco ..... Shut down 1,500 ft.

HENDERSON COUNTY

H. E. Ashburn et al's No. 1 T. E. Barry, center of Barry's 59-ac. tract in A. York Sur. ..... Cleaning out to bottom 2,510 ft.
L. G. Bradstreet's No. 1 Julia J. Shaunessy, 2,776 ft. from N and 300 ft. from W of survey or farm, John Isard Sur. ..... Drlg. 3,813 ft.
Chapman's No. 1 Cade, 1,662 ft. from N and 3,294 ft. from W of J. B. Dorsey Sur. ..... Fishing 3,199 ft.
George Pace et al's No. 1 Mrs. Sarah Anthony, 273 ft. N and 132 ft. W of SE cor. of S. Anthony 632-ac. tract, Jose W. Battvan Sur. ..... Shut down 2,730 ft.
Sunray Oil Co.'s No. 1 Davis, 600 ft. S and W of most easterly NE cor. of 164-ac. tract, Eldridge Harris Sur. ..... Top Woodbine sand 4,497 ft.; sand 4,529-60 ft.; salt water; shut down 4,560 ft.

HUNT COUNTY

Branson et al's No. 1 West, 350 ft. N, 350 ft. W of W 60-ac. tract, Jas. Rooces Sur. ..... Drlg. 2,985 ft.

KAUFMAN COUNTY

Shaw & Alexander's No. 1 Barrow, 2,360 ft. S and 200 ft. W of R. A. Terrell Sur., 4½ miles N of McCoy ..... Coring sand 3,210 ft.

LAMAR COUNTY

Everett & Allen's No. 1 Guest, 250 ft. S and 2,046 ft. E of 100-ac. tract, L. Roberts Sur. ..... Spudded and shut down.

NAVARRO COUNTY

Young et al's No. 1 Farmer, 700 ft. from S and 400 ft. from E of 110-ac. farm in F. Finley Sur. ..... Shut down 960 ft.

RAINS COUNTY

Everett & Morrison's No. 1 Franklin, 640 ft. from S and E of 75-ac. tract in John Christian Sur., 6 miles SE of Emory ..... Spudded and shut down.

RUSK COUNTY

Clem S. Clark's No. 1 Maude R. McCafflin, 427 ft. from N, 166 ft. from W of farm, Ellie Blackburn Sur. .... Drlg. 2,486 ft.
C. M. Joiner's No. 3 Bradford, Juan Ximenes Sur. ..... Shut down waiting on csg. 3,594 ft.
Mass et al's No. 1 Matthews, 3,244 ft. from N, 4,356 ft. from E, Dalines Cartinas Sur. ..... Derrick down.

SMITH COUNTY

Owens & Sloan Oil Co.'s No. 1 Starnes, 846 ft. along W lines of John Waller Sur. from NE cor. of J. O. Dillard Sur., and 80 ft. E at right angles to W line of J. Waller Sur. ..... Drlg. 2,910 ft.
Sun Oil Co.'s No. 1 D. McGehee, 500 ft. W and 250 ft. S of SW cor. of Mrs. Julia Phillips 55-ac. tract, Thomas Quevado Sur. ..... Spudded 35 ft.
Thayer & Rogers' No. 1 Willingham, 150 ft. N and W of 14.5-ac. tract, Jacob Hernin Sur. ..... Drlg. 820 ft.
Winona O. & G. Co.'s No. 1 Freeman, 150 ft. from S, W of 89-ac. tract in A. J. Legrone Sur., 4 miles SE of Winona ..... Shut down 3,525 ft.; pulled in derrick.

VAN ZANDT COUNTY

Anderson et al's No. 1 York, 65 ft. from E and 150 ft. from S of excess strip, offset to SW cor. Shell Pet. Corp.'s Taylor lease, John Walling Sur. ..... Rig up.
L. R. Barton's No. 1 Wamble, 300 ft. from S and W of 100-ac. tract in Pleasant Young Sur. ..... Drlg. 1,800 ft.
Broderick & Calvert's No. 1 M. F. Shirley, 150 ft. from W in C of N and S lines of 2.1-ac. strip, John Walling Sur. ..... Set csg. 2,764 ft.; Pecan Gap 1,540-1,646 ft.; top Woodbine 2,755 ft.
D. H. Byrd's No. 1 W. H. Mawes, 150 ft. from S and 150 ft. from W. J. Piles Sur. ..... Drlg. 1,050 ft.; elevation 573 ft.
E. L. Chapman's No. 1 Charles Wolverton, 215 ft. from N, 60 ft. S of NE cor. of Wolverton 10-ac. tract, William James Sur. ..... Drlg. 3,545 ft.
Cranfill & Germany's No. 1 Swain, 137 ft. N and 50 ft. from W of excess strip on W side of O. L. and L. L. Swain farm ..... Shut down 1,167 ft.
T. Daniels' No. 1 Fannie Cumbine, 185 ft. S and 175 ft. E of NW cor. 156-ac. tract, John Wright Sur. ..... Shut down 2,275 ft.
Dennis Oil Co.'s No. 1 C. W. Morris, 100 ft. from N and 300 ft. from E lines of Morris 160-ac. tract in C. L. Morris Sur., 5 miles SE of Ben Wheeler ..... T. D. 2,071 ft.; will abandon.
Hartt Oil Co.'s No. 1 Dr. L. M. Cox in A. C. Night Sur., 1,785 ft. N of S line and 524 ft. E of W line .... Derrick.
H. Helms et al's No. 1 Bogue, 647 ft. W and 155 ft. S of SE cor. of J. M. Brown 70-ac. in Marshall University Sur., SE of Van ..... Drlg. 1,185 ft.
B. P. Hervey's No. 1 Foster & Smith, 150 ft. S and 150 ft. W of 104-ac. tract, Margaret Neal Sur. ..... Shut down 4,601 ft.
Howard & Dooley's No. 1 Elliott 188-ac. tract in W. H. Bundy Sur. ..... Derrick.
Humble Oil & Ref. Co.'s No. 2 Carroll, 750 ft. W of E line and 250 ft. N of S line of Carroll 988-ac. tract, William Daniel Sur. ..... Location.
Humble Oil & Ref. Co.'s No. 1 L. A. Dowdle, 1,027 ft. N of S line and 150 ft. E of W line, William Daniel Sur.. Waiting on cement to set 2,943 ft.
Humble Oil & Ref. Co.'s No. 4 Blake, 735 ft. W of most NE line and 250 ft. S of N line of Blake 2,014-ac. tract, John Walling Sur. ..... Location.
Imperator Oil Co.'s No. 1 G. J. Luther, in SW cor. G. J. Luther 32-ac. tract ..... Shut down 2,660 ft.
Imperator Oil Co.'s No. 2 G. W. Carter, 175 ft. from S and 35 ft. from W of G. W. Carter 171-ac. tract, William Daniel Sur. ..... Shut down.
Jenkins et al's No. 1 V. T. Davis, SE cor. of 139.8-ac. tract, Nacogdoches County School Land ..... Drlg. 2,917 ft.
Kraft & Kelsey's No. 1 Enas in Vacancy strip on E side of Sam Allen and Wylie Enas farms in J. Prado Sur.. Shut down 1,328 ft.
T. W. Moore's No. 1 Kellam, C of 62-ac. farm in Jesse Russell Sur. ..... Location.
Priest et al's No. 1 Blewitt, 175 ft. NW and SW of SE cor. of NW 84-ac. tract, E. Porter Sur. ..... Shut down 3,003 ft.
Pure Oil Co.'s No. 1 A. D. Clark, 200 ft. S of N line and 150 ft. W of E line Mund Gross Sur. ..... Waiting on cement to set 2,837 ft.
Pure Oil Co.'s No. 1 H. P. Tunnell, 200 ft. S of N line, 285 ft. W of E line James Pace Sur. ..... Shut down 2,820 ft.
Pure Oil Co.'s No. 1 Humphreys, 225 ft. out of NE cor. of lease, A. McPhail Sur. ..... Shut down 2,799 ft.
Pure Oil Co.'s No. 1 R. A. Howell, 825 ft. S of N line, 225 ft. E of W line, Mund Gross Sur. ..... Coring 2,841 ft.
Pure Oil Co.'s No. 1 A. D. Clark, 672 ft. S of N line and 217 ft. E of W line, A. H. Wiley Sur. ..... Preparing to drill plug.
Pure Oil Co.'s No. 1 O. L. Swain, 225 ft. W of E line and 200 ft. N of S line, John Walling Sur. ..... Drlg. 2,355 ft.
Pure Oil Co.'s No. 1 Mrs. W. A. York, 650 ft. S of N line and 225 ft. E of W line, John Walling Sur. .... Setting cement 2,350 ft.

Pure Oil Co.'s No. 1 J. L. Petty, 250 ft. out of SE cor. Nacogdoches County School Land ..... Waiting on cement to set 2,660 ft.
Pure Oil Co.'s No. 1 W. F. Swain, 328 ft. N of S line and 176 ft. W of most westerly E line, Mund Gross Sur... Preparing to drill plug 2,722 ft.
Pure Oil Co.'s No. 1 B. E. Crim, 250 ft. S of N line and 200 ft. W of E line, John Walling Sur. ..... Waiting on cement to set 2,868 ft.
Pure Oil Co.'s No. 1 Davis, 127 ft. from S and 200 ft. from W of 139-ac. tract, Nacogdoches County School Land ..... Derrick standing.
Pure Oil Co.'s No. 1 Shirley, 93 ft. from S and 354 ft. from W of 43-ac. tract, John Walling Sur. ..... Drlg. 2,390 ft.
Shell Pet. Corp.'s No. 1 Taylor, 250 ft. S and 200 ft. E of 30-ac. farm, John Walling Sur. ..... Top Pecan Gap 1,525 ft.; drlg. 2,358 ft.
Texas Chief Oil Co.'s No. 1 Foster, 600 ft. E of W line and 600 ft. N of S line of W. P. Foster's 151-ac. tract in F. Montgomery Sur., 7 miles S of Canton .... Fishing 2,464 ft.
The Texas Company's No. 2 Carter, 150 ft. S and 300 ft. W of 171-ac. farm, William Daniel Sur. ..... Top Woodbine 2,961 ft.; coring 2,985 ft.
The Texas Co.'s No. 1 R. A. Tunnell, 215 ft. S of N line and 105 ft. E of most easterly-west line, John Walling Sur. ..... Location.
Vitek Oil Co.'s No. 1 Smith, 150 ft. S and 15 ft. from W of L. A. Smith 40-ac. farm in John Walling Sur... Derrick.

WOOD COUNTY

Big Indian Oil Co.'s No. 1 R. J. King, 450 ft. W of E line and 150 ft. N of S line of King's 100-ac. tract in Wm. Barnhill Sur. ..... Shut down 4,569 ft.; Woodbine sand 4,569 ft.
Loche & Clark's No. 1 A. C. Pick, 165 ft. S of NE cor. G. C. Reeves 25-ac. tract, Daniel Fuller Sur. .... Shut down 997 ft.

COMMON METHOD FOR TESTING CORROSION

(Continued from Page 39)

make two samples having exactly the same weight and dimensions.

The sample must have the maximum possible plane surface for a minimum weight. The thickness is limited first by the type of material and secondly by the rate of corrosion. However, a thickness of one-sixteenth inch is generally suitable and gives a good weight ratio. A width of 1 inch and a length of 2 inches are the other dimensions with a one-fourth inch hole for suspension. A piece of steel this size would weigh in the neighborhood of 15 grams and would present a surface of 27.9 square centimeters. For physical testing this piece is unsuitable being too small. The physicist's requirements call for the standard mechanical test sample dimensions but a corrosion test piece of these dimensions is entirely too large for insertion under service conditions in most cases and is also too thick for good weight ratio.

A compromise sample has been recommended having a maximum thickness of three-thirty-second inch, width 1 inch and length 4 inches. The weight accuracy will be somewhat diminished. Where there will be no opportunity for physical tests the smaller dimensions will give more accurate and satisfactory results, and it will pay to use even thinner and smaller samples. A considerable loss of time and money may result from not being able to weigh the corrosion loss accurately.

The fourth direction means to locate the samples at the most convenient point for future inspections at the same time trying to approximate the corrosive conditions on the apparatus as far as possible. This would incur using the same corrosive medium, at approximately the same temperature and velocity with the inclusion of other factors that affect corrosion of service equipment.

The fifth direction requires that electrical insulating supports be used for the samples and while sometimes this is questioned it sets aside the argument concerning electrolytic action between samples. Glass tubing through which wire or string may be threaded is most convenient for this use.

The sixth instruction is given in order to keep the sample in its normal corroding condition as scale has an important bearing on corrosion rate.

The seventh instruction is of course optional and while accurate information is not usually obtainable the samples are kept track of and a very interesting picture of variations which take place is obtained. In the event a sample is lost some estimate of its corrodibility may be obtained from the last inspection.

The same location should of course be made in following the eighth instruction.

The ninth instruction gives the actual and accurate total loss by corrosion which may be calculated in any unit loss desired. The writer prefers the decimal system of loss in centimeter depth per 100 days, this multiplied by 1.437 will give the approximate loss in inches per year which latter is the more commonly used unit.

The subject of pitting is, in the writer's opinion, one of judgment. All metals and alloys will pit during corrosion, the causes are numerous. Should a sample show a decided tendency to pit deeply that material should be discarded without further argument. The adopted method for taking care of pits in corrosion testing is to determine the depth of pit by grinding down the sample.

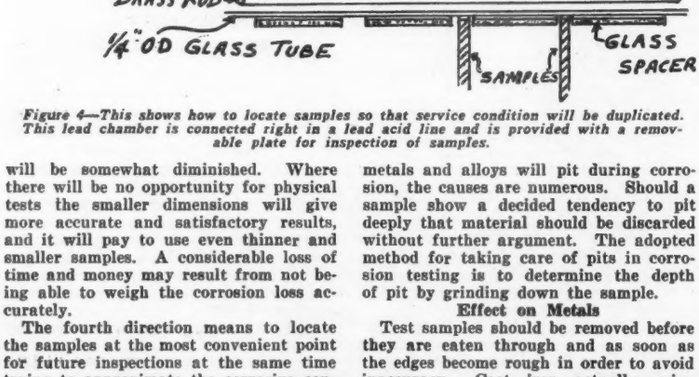


Figure 4—This shows how to locate samples so that service condition will be duplicated. This lead chamber is connected right in a lead acid line and is provided with a removable plate for inspection of samples.

Effect on Metals

Test samples should be removed before they are eaten through and as soon as the edges become rough in order to avoid inaccuracy. Cast iron actually gains weight after removal from test and corrosion is more prominent by softening than by weight loss. Aluminum alloys as well as many other nonferrous metals, indicate corrosion effect by becoming brittle, so considerable judgment and inspection is required in this work, and this is warranted by the importance of securing reliability in making recommendations.

It has been suggested that the test samples be designed so that the loss expressed in a predetermined unit may be read directly from the loss in weight, for example: a piece of steel 4 centimeters by 15.225 centimeters by .15 centimeter would show a penetration of .001 centimeter for each gram of weight loss. This certainly has advantages and can be adopted for some classes of work but for general application is impractical, partly because samples of proper size are not always available and partly because of difficulty in obtaining exact dimensions. No exact uniformity in samples is really necessary and in many cases it is impossible. This is illustrated in Figure 1 which represents a group of samples after six months submerged test in Sabine Lake, Tex. All that is necessary is to keep the weight surface ratio low.

A study which featured scale formation was made in the case of screens for flame arrestors. The scale clogged the screen, so a material resistant to this particular type of corrosion and at the same time nonscaling was desired and found in tin coated brass wire. Figure 2 is a set of curves of various metals drawn to illustrate the corrosion rate and scaling tendency which is given to demonstrate the possibilities of sample testing. Here is shown the variation in rate at different periods and the building up, and loss of scale is plainly pictured.

Figure 3 gives the two extreme sizes of test samples and the compromise together with one method of suspension. Another method of suspension is shown in Figure 4 where the samples were placed in a line carrying 45° Be. sulphuric acid. A third method has been suggested for pressure still tube tests and is illustrated in Figure 5.

Part of the testing equipment will be the incorporation of special chambers where flow effect is required. The velocity of fluid in a pipe has a decided effect on corrosion so the chamber should be designed so that there will be room for the samples with their suspension and to approximate the normal velocity past the samples, there should also be provisions for readily removing samples as desired.

There are cases where round rods are the preferred shape but here the surface weight ratio is unfavorable for accuracy and as the metal goes into solution the exposed surface diminishes forcing new measurements. Tubular pieces can be obtained with a good surface weight ratio but the corrosion attack on the inside is likely to be much different from that on the outside and it is impossible to obtain many of the metals in tubular form.

The question of reference sample quality has been discussed. From a laboratory standpoint it might be of value to have a standard sample made to definite specification but it is doubtful if there is any greater variation in corrodibility between different common steels than there would be between different heats of a specified steel. The practice of using a sample cut from the same metal used in the apparatus where testing is being done seems most advisable and the commonly used mild steel is suitable as a check sample.

Important Factors

Working and fabricating metal produce many physical effects not found in small samples. Uneven corrosion will cause quicker failure of metal in service than is indicated from weighed samples. These important factors must be given full consideration in making up a classified list. Metallurgists will not approve of this rather rough method of testing.

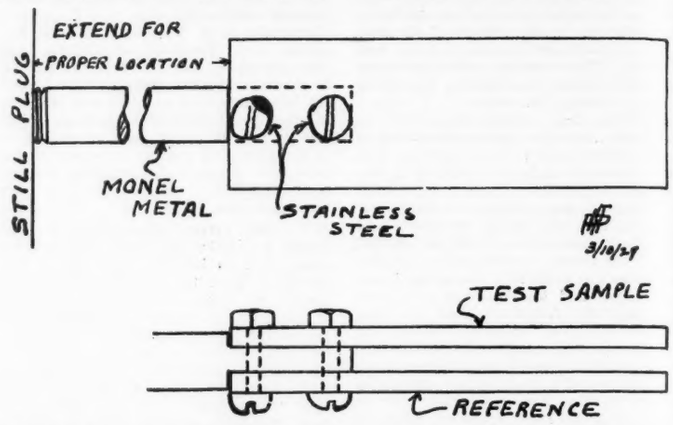


Figure 5—In pressure still preheaters metals can be tested under high temperature and pressure in cracked oil. A convenient means for introducing samples is to fasten them to the tube plugs at the return bends as shown.

Some test method of the sort described above, built around these fundamentals should be adopted, and used by all those interested in corrosion for the purpose of composing the great diversity in opinion now existing concerning the relative value of various alloys. Only by this means can practical savings be made and the opportunity be presented for alloys to be brought to a more perfect state.

The author hopes to have the opportunity later to discuss in detail the results of tests he has made and their connection with service experience.

Many seeming paradoxical conditions are found in corrosion work and a story might be written around the discovery by the corrosion expert of one large oil company, that a cheap coal tar compound turned out to be the best protector of all that were tried for the inside of storage tanks and that a heavy fraction of the crude oil itself could be used successfully to protect the whole interior of crude storage tanks against corrosion. These two compounds, which are simple and cheap, fall far short of the specifications laid down and published by corrosion experts for materials to protect the interior of storage tanks but they are standing up. It is expected that details of these discoveries will be presented in a paper at the annual convention of the American Petroleum Institute at Chicago in November.

INCOME TAX DECISION

WASHINGTON, D. C., Sept. 15.—For the first time the right of the Federal Government to impose an income tax upon profits derived from the operation of State oil and gas leases has been brought to the supreme court of the United States for decision.

This action is based on the same grounds upon which the supreme court has decided that a lessee holding a lease from the United States was exempt from State taxation. The case is known as Oil Corp. against Bass and comes on appeal from the circuit court of appeals for the fifth circuit at New Orleans.

In this case the State of Texas leased certain property to the taxpayer on a royalty basis for the development of oil, gas and other natural resources. The lease provided that the rights acquired under it were subject to taxation the same as other property. The State by throwing such leases open to taxation generally withdrew from the lessee all rights of exemption which might have otherwise existed the circuit court held, thus reversing the decision of the district court.—C. E. K.

OKLAHOMA FIELDS

(Continued from Page 51)

duction of better than 100,000 bbls. for the first 24 hours. The completed wells were as follows: Prairie Oil & Gas Co. and Tom Slick Oil Co.'s No. 2 Sigmon, SW cor. NW SW, Section 32-11-2w, flowing 2,580 bbls. the first four hours from a total depth of 6,680 feet in the Simpson sand. Same operators' No. 6 Sigmon, NE cor. SW SW, Section 32-11-2w, made 2,070 bbls. in four hours from the Simpson sand at a total depth of 6,674 feet. Indian Territory Illuminating Oil Co.'s No. 5 J. Corff, CEL SW SW, Section 11-11-3w, flowed 3,827 bbls. the first 16 hours from the Simpson sand at a total depth of 6,593 feet. No. 1 E. Precure, SW cor. SE SE, Section 11-11-3w, making 1,393 bbls. the first 4 hours and 40 minutes; total depth was 6,472 feet. No. 3 C. Trosper, in Section 14-11-3w, made 289 bbls. the first 55 minutes from sand at a total depth of 6,510 feet. No. 6 Coppenger, in Section 11-11-3w, made 420 bbls. the first 2½ hours from sand at a total depth of 6,547 feet. No. 2 Hammer, in Section 11-11-3w, made 3,292 bbls. the first 16 hours from sand at a total depth of 6,450 feet. No. 10 Sudik, in Section 31-11-2w, made 3,674 bbls. the first 3 hours and 40 minutes from a total depth of 6,636 feet. No. 1 Magnolia Heights, in Section 14-11-3w, made 2,814 bbls. the first 16 hours from sand at a total depth of 6,561 feet. No. 4 M. Knox, in Section 14-11-3w, flowed 274 bbls. the first 40 minutes from Detrital sand at a total depth of 6,369 feet. No. 12 L. Jones, made 3,875 bbls. the first 16 hours from sand at a total depth of 6,634 feet. No. 4 Jones Community, in Section 1-11-3w, made 1,632 bbls. the first 16 hours from sand at a total depth of 6,410 feet. No. 4 H. G. Trosper, in Section 14-11-3w, made 1,625 bbls. the first five hours from sand at a total depth of 6,478 feet. Continental Oil Co.'s No. 2 Sudik, in Section 6-10-2w, Cleveland County, made 320 bbls. the first 24 hours from a total depth of 6,766 feet in sand. Wirt Franklin Petroleum Corp.'s No. 10 Theimer, in Section 2-11-3w, flowed 1,127 bbls. the first 13 hours from sand at a total depth of 6,569 feet. No. 2 Holder, Section 2-11-3w, flowed 2,092 bbls. the first 11 hours and 45 minutes from sand at a total depth of 6,535 feet. Anderson-Prichard Oil Corp.'s No. 2 Pest House, in Section 1-11-3w, made 1,090 bbls. the first two hours from sand at a total depth of 6,432 feet. Tom Slick Oil Co. and others' No. 3 Danruthers, in Section 2-11-3w, flowed 2,026 bbls. the first 13 hours from sand at a total depth of 6,517 feet. No. 1 Miller, in Section 2-11-3w, made 2,011 bbls. from sand at a total depth of 6,507 feet. Hall & Briscoe's No. 5 Holmes, in Section 10-11-3w, made 150 bbls. the first five minutes from sand at a total depth of 6,540 feet. Century Petroleum Co.'s No. 1 Barr, in Section 10-11-3w, made 3,933 bbls. of oil the first 7¾ hours from sand at a total depth of 6,610 feet.

Greater Seminole Production

The production from the Greater Seminole area shows an increase for the week ending September 8 over the previous week. Included in these gauges are the new potentials for the month of September. The total production of the pools listed below was 221,087 bbls. for the same seven days. The Seminole Pool averaged 143,545 bbls. from 1,894 wells. The daily average gauges from the different pools were as follows:

Pool—	Wells	Bbls.
Little River	375	24,947
East Little River	84	14,139
Carr City	60	6,168
Maud	139	3,169
Mission	98	7,367
Bowlegs	280	13,740
Earlsboro	294	22,932
S. Earlsboro	27	11,581
E. Earlsboro	155	15,339
Seminole	264	14,360
East Seminole	33	2,315
Searight	85	7,488
Allen	274	15,722
Asher	26	1,305
Wanette	22	9,458
Konawa	96	22,790
St. Louis	487	22,880
Sasakwa	51	5,387
Total	2,850	221,087

The pipe line shipments from the Greater Seminole area show an increase for the week ending September 8 of about 20,000 bbls. a day over the previous seven days. The total shipments were 203,110 bbls. a day. The Texas Company has emptied two of its 55,000-bbl. tanks in Section 35-8-6, Seminole County, and is now running oil from its Earlsboro storage. The daily average shipments from the different pools were as follows:

Company—	Seminole (bbls.)	Asher, Pearson, St. Louis (bbls.)	Konawa (bbls.)
Barnsdall	2,235	....	....
Champlin	5,070	....	521
Continental	276	....	....
Consolidated	....	2,956	....
Cosden	6,973	....	6,398
Deep Rock	3,261	605	....
Empire	4,265	....	....
Gulf	21,971	3,638	568
Independent	....	1,910	....
Magnolia	6,019	5,619	....
Oklahoma	22,663	2,861	420
Prairie	15,936	4,671	4,352
Prod. & Refiners	605	....	....
Pure	2,306	....	....
Shell	....	....	....
Sinclair	31,221	7,015	5,992
Texas	8,604	2,089	3,213
Tidal	9,321	2,721	....
White Oak	1,821	....	....
Total	144,413	34,085	20,464
Tank cars	4,118		
Grand total	148,561		

Actual Production

The daily average production from the Oklahoma City Field for the seven days ending September 15, showing the date, number of barrels produced each day, number of wells on production, and total number of wells completed each day, was as follows:

Date—	Bbls.	Wells prod.	Wells comp.
September 9	128,135	60	510
September 10	85,706	52	514
September 11	102,621	66	518
September 12	98,780	59	520
September 13	41,804	39	521
September 14	112,899	62	525
September 15	100,601	63	528

Oklahoma City Oil Shipments

The total shipments from the Oklahoma City Pool for the week were 682,643 bbls. The daily average shipments were as follows:

Company—	Dly. av.
Empire	21,045
I. T. I. O.	4,567
Magnolia	11,565
Oklahoma	11,749
Prairie	14,478
Sinclair	18,319
Shell	394
Tidal	4,688
Capitol P. & R.	1,929
Cunard Ref.	571
Peacock & Peveto	214
Sinclair to storage	9,430
Total	98,949

Oklahoma City's Shut-in Production

The initial production of the shut-in wells in the Oklahoma City Pool that have been allowed to produce for 24 hours or less as of September 13 and are now shut in for the proration period, was 760,746 bbls. The initial production and the approximate dates each well will be opened for its regular producing period follows:

I.T.I.O.:			
Sudik	*1	[1]30,000	.....
Spillman	*1	10,227	9-26-30
Holmes Gray	*1	[2]4,173	9-26-30
N. Emerson	6	[3]113	9-25-30
Carrico	*1	[4]7,517	9-27-30
N. Emerson	11	[5]699	9-27-30
Jones	*13	36,186	9-28-30
W. J. Phillip	*1	[6]7,586	9-29-30
Jones	*14	[7]562	9-31-30
Corff	*1	[8]917	10- 3-30
Habegger	*1	[9]3,296	10- 4-30
Peterson	*5	[10]3,755	10- 5-30
Phillips	*1	[11]7,586	10- 5-30
Carrico	*1	9,744	10- 4-30
Coppenger	*1	10,010	10- 5-30
Watters	*5	[12]11,544	10- 5-30
M.-K.-T.	*1	[13]3,264	10- 6-30
H. G. Trosper	*3	7,002	10- 6-30
Boulevard	*1	[14]891	10-13-30
Huffman	*1	3,015	10-12-30
Watters	*6	3,362	10-10-30
Lemon	*2	4,502	10- 9-30
Watters	*4	2,703	10- 9-30
H. G. Trosper	*3	14,720	10- 9-30
R. Hemmer	*1	[15]1,340	10-20-30
Ferndale Commun.	*4	[16]5,966	10-20-30
Pasadena Heights	*2	[17]2,626	10-19-30
State Land	*5	[18]5,524	10-18-30
S. Peterson	*6	[19]10,356	10-17-30
C. Trosper	*4	[20]482	10-20-30
Mid Texas	*1	[21]4,864	10-20-30
Coppenger	*5	[22]3,465	10-20-30
Starkey	*1	[23]716	10-20-30
M. Unsell	*3	[24]1,393	10-20-30
Capshaw	*1	[25]740	10-22-30
Habegger	*2	[26]2,036	10-23-30
H. W. Jones	*3	[27]5,885	10-23-30
B. Johnson	*7	[28]1,400	11- 6-30
C. Trosper	*3	[29]4,060	11- 6-30
S. Peterson	*7	[30]6,612	11- 5-30
Carrico	*2	[31]3,497	11- 4-30
Eacock	*1	[32]1,351	11- 4-30
Handel	*1	[33]1,824	11- 4-30
S. Peterson	*8	[34]4,396	11- 4-30
E. Williams	*1	[35]4,132	11- 3-30
Brown	*1	[36]3,705	11- 3-30
Johnson	*8	[37]581	11- 2-30
M. Sudik	*10	[38]24,000	11- 9-30
R. Hemmer	*2	[39]4,000	11- 9-30
Coppinger	*6	[40]4,400	11- 9-30
Corff	*4	[41]941	11- 8-30
Coppinger	*7	[42]1,582	11- 8-30
Coppinger	*2	[43]515	11- 8-30
Johnson	*6	[44]2,388	11- 8-30
M. Unsell	*4	[45]96	11- 7-30
Mt. Vernon	*1	[46]909	11- 7-30
M. Unsell	*6	3,666	11- 7-30
Spillman	*4	[47]5,451	11- 7-30
Precure	*2	[48]5,977	11- 6-30
Eacock	*2	3,079	11- 6-30
Theimer	*6	1,992	11- 6-30
Salsman	*5	273	11- 6-30
Phelan Addition	*1	[49]2,000	11-19-30
H. G. Trosper	*4	[50]1,625	11-19-30
Jones Community	*4	[51]1,632	11-19-30
L. Jones	*12	[52]3,875	11-18-30
M. Knox	*4	[53]274	11-17-30
Magnolia Heights	*1	[54]2,814	11-18-30
Precure	*1	[55]1,393	11-18-30
J. Corff	*5	[56]3,827	11-18-30
W. Franklin:			
Theimer	*8	[57]20,000	9-29-30
Holder	*1	[58]3,000	10- 6-30
Page	*1	7,209	10- 2-30
Page	*2	262	10-29-30
Theimer	*7	[59]5,077	10-16-30
Theimer	*11	[60]6,528	10-30-30
Lowery	*9	[61]8,756	10-26-30
Wright	*3	[62]6,796	11- 3-30
Theimer	*13	[63]4,098	11- 8-30
Holden	*2	[64]2,092	11-19-30
Wright	*2	[65]7,000	11-17-30
Theimer	*10	[66]1,127	11-18-30
Lowery	*10	[67]746	11-18-30
Cromwell:			
Trosper Park	*20	[68]8,726	9-22-30
Trosper Park	*23	14,623	9-22-30
Trosper Park	*24	[69]3,008	9-23-30
Trosper Park	*25	[70]940	10-20-30
Trosper Park	*27	[71]187	10-19-30
Sinclair:			
School Land	*5	[72]8,808	10-24-30
School Land 54	*6	[73]12,000	9-14-30
Vinci	*6	[74]10,500	10- 1-30
Vinci	*15	[75]175	10-19-30
Vinci	*10	[76]340	10-18-30
Vinci	*13	[77]429	11-19-30
Coline:			
Clauer	*9	11,948	9-24-30
Clauer	*13	[78]545	10-10-30
Clauer	*12	1,401	10-18-30
Clauer	*7	[79]963	10-17-30
Warren	7	8,826	9-25-30
Slick:			
G. Milner	*1	[80]9,924	9-14-30
Crawford	*1	13,883	9-28-30
Baker	*4	19,328	9-21-30
Baker	*1	[81]1,428	10- 5-30
Baker	*2	[82]10,250	10-11-30
Milner	2	12,886	10- 2-30
Page	*1	[83]3,433	10-13-30
Page	*2	[84]1,090	10-20-30
Frost Heights	*1	[85]3,937	10-18-30
Frost Heights	*2		
Alexander	*1	[86]330	10-19-30
Campbell	*1	[87]13,875	10-30-30
Foote	*2	[88]464	11- 4-30
Atkinson	*1	[89]11,340	10-26-30
Trumbley	*1	[90]2,611	10-26-30
Frost Heights	*4	[91]4,368	11- 4-30
Baker	*3	[92]3,155	11- 3-30
Atkinson	*2	[93]10,338	11- 2-30
C. C. Frost	*1	[94]1,097	11- 9-30
Houston	*1	[95]582	11- 9-30
Moore	*1	[96]1,333	11- 8-30
Classen	*2	[97]9,644	11- 6-30
Alexander	*2	[98]987	11- 6-30
Gleason	*1	[99]3,302	11-19-30
Miller	*1	[100]2,011	11-19-30
Danruthers	*3	[101]2,026	11-19-30
Frost Heights	*3	[102]97	11-19-30
Mid-Texas:			
Hiddleston	*1	2,320	10- 2-30
Hall & Briscoe:			
Holmes	*3	[103]7,201	10-20-30
Holmes	*2	[104]4,032	10-20-30
Holmes	*5	[105]150	11-18-30
Phillips Pet. Co.:			
Traders Comptio	*1	4,055	9-25-30
Prairie:			
Sigmon	*4	7,520	10- 8-30
Sigmon	*5	[106]4,240	10-30-30
Sigmon	*7	[107]2,565	10-24-30
Sigmon	*6	[108]2,070	11- 8-30
Sigmon	*2	[109]2,580	11- 8-30
Shell:			
Egermeyer	*1	[110]2,043	10-10-30
Plains & Denver:			
Boulevard	*1	4,968	10-13-30
Sadler	*1	[111]450	11-19-30
Century Pet. Co.:			
Wyatt	1	[112]3,000	10-14-30
Barr	*1	[113]3,933	11-19-30
Independent:			
Hatcher	*1	5,339	10-18-30
Harrell	*1	[114]1,150	11- 2-30
Julian:			
Community	*1	4,364	10-18-30
Hauser	*1	[115]3,600	10-20-30
Skelly Oil Co.:			
Dillon	*2	[116]4,640	10-23-30
Ainsworth	*4	[117]3,645	10-30-30
Tanner	*1	[118]2,790	11- 3-30
Ainsworth	*3	[119]1,115	11- 4-30
Ainsworth	*2	[120]1,665	11- 4-30
Tanner	*2	[121]2,725	11- 9-30
Mabee & Blackstone:			
Harvey	*1	[122]675	10-25-30
Marco Oil Co.:			
Holder	*1	[123]2,600	11- 2-30
Anderson & Prichard:			
Pest House	*1	[124]10,165	11- 3-30
Roosevelt	*1	[125]10,000	11- 6-30
Pest House	*2	[126]1,090	11-19-30
Champlin Oil & Ref.:			
McKeehan	*1	[127]4,480	11- 6-30
Jones & Blackwell O. & G.:			
Townlot	*1	[128]10,000	10-25-30
Continental Oil Co.:			
Sudik	*2	320	11-18-30
Mid-Kansas O. & G.:			
Mollman	*4	[129]740	11-19-30
Total	159	760,746	

*Wells producing from the Simpson sand. All others are producing from the Arbuckle lime.

[1]Estimated. [2]Thirteen hours. [3]Fourteen hours. [4]Twelve hours. [5]Five hours. [6]Eighteen hours. [7]Sixteen, one-half hours. [8]Seventeen hours. [9]Nineteen hours, 45 minutes. [10]Sixteen hours. [11]One hour, 15 minutes. [12]Twelve minutes. [13]Eleven and one-half hours. [14]Fifteen hours. [15]Twenty-one and one-half hours. [16]Twenty hours. [17]Eighteen, one-half hours. [18]Six hours. [19]Fifteen hours, 40 minutes. [20]Ten and one-quarter hours. [21]Four hours. [22]Eight hours. [23]Eleven hours, 10 minutes. [24]Nine hours, 30 minutes. [25]Fourteen and one-half hours. [26]Ten hours, 15 minutes. [27]Twenty-one hours. [28]Thirty minutes. [29]Two hours. [30]Nine hours. [31]Three hours. [32]Twenty-two hours. [33]Two hours. [34]Seven hours 45 minutes.

These notations indicate the number of hours and wells produced on their initial production test.

Beckham County

W. R. White has the slush pit dug for No. 1 Shough, C NW SW, Section 22-11-22w.

Bryan County

Bryan Oil Co.'s No. 1 Childs, NE cor. SE SW, Section 8-7s-10, is drilling at 200 feet.

Caddo County

Magnolia Petroleum Co.'s No. 8 Niles, SW cor. NW NW, Section 36-6-10w, has been completed for 750 bbls. in sand 3,359-84 feet. No. 9 Niles, NE cor. NW, Section 36-6-10w, made 31 bbls. in sand 2,712-23 feet. No. 8 Lindsey, NE cor. NW SE, Section 36-6-10w, was completed for 32 bbls. in sands 2,334-35 feet and 3,245-52 feet. No. 9 Lindsey, NW cor. NE SE, Section 36-6-10w, is pumping 270 bbls. from sand 3,333-41 feet, total depth 3,377 feet. J. B. Nichlos' No. 1 Rigney, SE cor. NW, Section 12-5-9w, has been abandoned at 3,347 feet.

Cherokee County

Savoy Oil Co.'s No. 1 Moore, SW cor. NE SW, Section 21-17-20, is dry and abandoned at 1,078 feet.

Carter County

Wirt Franklin Petroleum Corp. has the rig up for No. 4 Mitchell, NE cor. SE SE, Section 24-1s-3w. Carter Oil Co. made location for No. 2 Joe Franklin, SW cor. NE NE, Section 24-1s-3w. J. H. Hudson and others' No. 1 R. D. Meeks, NW cor. SW SW, Section 19-1s-2w, is a rig. Walter Gant and others' No. 1 W. Mitchell, NE cor. NW NW, Section 30-1s-2w, is a rig. Carter Oil Co.'s No. 1 Joe Franklin, NE cor. NW NE, Section 24-1s-3w, made 910 bbls. in sand 2,063-2,158 feet. Wirt Franklin Petroleum Corp.'s No. 2 E. R. Spigner, NW cor., Section 24-1s-3w, has been completed for 553 bbls. in sand 2,168-2,285 feet. K.W.B. Drilling Co.'s No. 1 Noble, SW cor. NW SE, Section 14-2s-2w, has been completed for 750,000 feet of gas in sand 335-67 feet after plugging back from 1,615 feet. E. S. Lamb and others' No. 1 Worsham, SW cor. NW SW NE, Section 25-4s-3w, is dry and abandoned at 2,087 feet.

Cotton County

Harris & McNeal's No. 1 Smith, NW cor. SE, Section 34-1s-10w, has been abandoned at 2,212 feet. No. 1 Mudd, SE cor. NE NE SE, Section 10-2s-10w, is dry and abandoned at 2,750 feet.

Creek County

The Prairie Oil & Gas Co. made location for No. 1 Oates, NW cor. NE, Section 14-19-9. William Sherry and others' No. 1-A C. Gooch, C SW NW, Section 21-16-11, is a machine. C. G. Tibbins Oil & Gas Co.'s No. 5 Sneed, NW cor. SE NW, Section 18-14-9, is drilling at 1,200 feet. McCullough and others' No. 1 Bible, NW cor. SW, Section 21-19-9, has been completed for 30 bbls. in sand 2,142-86 feet. Westfall Drilling Co.'s No. 1 Nave, SE cor. NW, Section 1-18-8, is dry and abandoned at 3,158 feet. Skelly Oil Co.'s No. 2 Replogle, NW cor. SE SW, Section 10-15-8, made 3,000,000 feet of gas in sand 3,170-78 feet.

Grady County

Meridian Gas Co.'s No. 1 Brown, CSL NW NW, Section 31-4-7w, made 12,000,000 feet of gas in sands 2,019-2,200 feet.

Lincoln County

Mid-Okla Oil Co.'s No. 1 Stufflebeam, NE cor. SW, Section 28-17-2, is a dry

hole at 3,940 feet. Magnolia Petroleum Co.'s No. 1 Winship, NE cor. SW, Section 2-13-4, is dry and abandoned at 5,266 feet.

Marshall County

Bob Neff and others' No. 1 Vandervolt, NW cor. SW NE, Section 19-5s-6, is drilling at 500 feet. Scivner & Tompson's No. 1 Blalock, SW cor. NW SW SW, Section 3-6s-6, is drilling at 505 feet. R. L. Keener's No. 2 Manday, SW cor. NE, Section 4-6s-6, is rigging up. J. C. Dess and others' No. 1 McComas, SW cor. SE SE NW, Section 13-5s-5, has been abandoned at 756 feet. R. L. Keener and others' No. 1 Monday, SW cor. NE, Section 4-6s-6, is a dry hole at 825 feet.

Muskogee County

Mack Drilling Co. has a machine on the location for No. 1 C. Rowe, SE cor., Section 27-16-15. E. B. Grubbs and others' No. 1 L. Bemo, NE cor. NW NW SE, Section 8-15-18, is a machine. J. R. Parks has the machine in for No. 2 J. Rentie, C NE SW, Section 15-15-18. Robinson Brothers' No. 7 H. Lewis, CSL SW NE, Section 8-13-16, is drilling at 1,150 feet. Indian Territory Illuminating Oil Co.'s No. 1 J. Lacey, C SE NW, Section 31-12-19, is drilling at 280 feet. J. L. Haner's No. 9 M. Stedham, NE cor. SE SE, Section 8-15-18, is dry and abandoned at 1,029 feet. J. R. Graves and others' No. 1 R. Davis, SE cor. NE, Section 14-13-16, has been completed for 5,000,000 feet of gas in sands 2,074-93 feet and 2,119-46 feet. Berry and others' No. 1 J. Taylor, C NE NW, Section 32-12-19, is dry and abandoned at 950 feet.

McIntosh County

Deep Fork Oil Co. has a machine on the location for No. 1 J. Martin, C SW NW, Section 35-12-14.

Oklahoma County

Wirt Franklin Petroleum Corp.'s No. 2 Page, SW cor. SE, Section 35-12-3w, has been completed for 5,713 bbls. at 6,500 feet after plugging back from 6,581 feet. Indian Territory Illuminating Oil Co.'s No. 3 H. W. Jones, SW cor. SE SW, Section 1-11-3w, made 18,069 bbls. in sand 6,230-6,446 feet. Jones Drilling Co.'s No. 1 Sullivan, Block 13, Lots 3 and 4, Commercial Addition, SE cor. SW NW SW, Section 1-11-3w, produced 13,061 bbls. in sand 6,260-6,490 feet. Champlin Oil & Refining Co.'s No. 1 McCulip, Block 2, Lots 31, 35, 50 and 51, Roosevelt Place, NW cor. NE NW NE, Section 2-11-3w, made 6,986 bbls. in sand 6,207-6,500 feet. Thomas B. Slick Oil Co.'s No. 2 Classen, Block 2, Lot 9, Reno Addition, NE cor. NW NW NW, Section 2-11-3w, has been completed for 22,370 bbls. in sand 6,317-6,586 feet. Indian Territory Illuminating Oil Co.'s No. 1 C. E. Trosper, NE cor. SE, Section 11-11-3w, has been completed for 4,610 bbls. in sand 6,275-6,523 feet. Cromwell-Franklin Oil Co.'s No. 27 Trosper Park, SE cor. SW SW, Section 12-11-3w, flowed 14,799 bbls. in Arbuckle lime 6,370-90 feet. Indian Territory Illuminating Oil Co.'s No. 4 Spillman, NW cor. SE, Section 14-11-3w, made 10,307 bbls. in sand 6,445-6,515 feet. Coline Oil Co.'s No. 16 Clauer, SE cor. NW SE, Section 25-11-3w, made 903 bbls. in sand 6,310-6,487 feet. Indian Territory Illuminating Oil Co.'s No. 8 Johnson, SW cor. SE NW, Section 25-11-3w, has been completed for 882 bbls. in sand 6,510-71 feet. Sinclair Oil & Gas Co.'s No. 15 Vencl, SW cor. SE SE, Section 31-11-2w, made 39,777 bbls. in sand 6,430-6,572 feet. No. 16 Vencl, SE cor., Section 31-11-2w, produced 39,293 bbls. in sand 6,485-6,602 feet. The Prairie Oil & Gas Co., Phillips Petroleum Co. and T. B. Slick's No. 2 Sigmon, SW cor. NW SW, Section 32-11-2w, has been completed for 15,400 bbls. in sand 6,326-6,680 feet. No. 3 Sigmon, NW cor. SW SW, Section 32-11-2w, has been completed for 12,408 bbls. in sand 6,394-6,680 feet.

Okmulgee County

A. McInturff moved a machine in for No. 1 H. Hawkins, CEL SE NW, Section 20-12-14.

Okfuskee County

Tulsa Oil Co. and others' No. 1 Davis, SE cor. NW SW, Section 3-12-9, is a rig. Kessler Petroleum Co.'s No. 1-A Calloway, CWL NE SW, Section 3-11-12, has been abandoned at 3,738 feet.

Osage County

Atlantic Oil Producing Co.'s No. 7, SE cor. SW SW, Section 19-25-8, is dry and abandoned at 2,486 feet. Carter Oil Co.'s No. 12, C SW SE, Section 28-25-9, has been abandoned at 2,390 feet. McCune, Wormser and others' No. 14, SE cor. NW, Section 15-24-8, made a 20-bbl. pumper in sands 2,670-75 feet and 2,371-80 feet, total depth 2,682 feet. Sidwell Drilling Co.'s No. 2, NW cor. NE NE, Section 35-24-8, drilled to 2,499 feet, plugged back 5 feet and made 5 bbls.

Pawnee County

Wasson and others' No. 1-A Wrightsman, NE cor., Section 8-20-8, is dry and abandoned at 3,005 feet.

Payne County

Magnolia Petroleum Co.'s No. 2 Jennings, NW cor. SW, Section 10-18-5, is preparing to deepen from 2,957 feet. Magnolia Petroleum Co.'s No. 7 Payne, NE cor., Section 6-17-4, is pumping 75 bbls. from Wilcox sand 4,197-4,228 feet.

Pontotoc County

Reiter-Foster Oil Corp.'s No. 1 Hightower, NW cor., Section 5-4-5, is a dry hole at 2,785 feet.

Pottawatomie County

Payne and others' No. 1-A Bullock, SE cor. NE NE, Section 22-6-3, West Asher Pool, is a cellar. Wilcox Oil & Gas Co. is erecting the rig for No. 6 Warren, NE cor. SW, Section 23-6-3.

Seminole County

Deep Rock Oil Corp. has the cellar dug for No. 1 Whitworth, NW cor. SW NE, Section 30-8-8. Parkening and others made location for No. 1 Wilson, SE cor. NW, Section 27-7-5. Eason and others staked location for No. 1 Fish, SE cor. SW SE, Section 19-7-8, Holdenville area. Crosbie & Moran's No. 1 Fleet, SW cor. NE, Section 11-6-7, is a rig under construction. Producers & Refiners Corp.'s No. 2 Harjo, SW cor. NW NW, Section 7-5-8, made 290 bbls. in sand 2,535-63 feet. The Texas Company's No. 2 Diana, SW cor. NW NE, Section 23-5-7, West Allen Field, has been abandoned at 4,330 feet. Burke-Greis Oil Co.'s No. 6 Nitchey, NW cor. NE SE, Section 18-5-8, Allen Pool, is dry and abandoned at 4,191 feet.

Stephens County

Barney Cockburn's No. 2 Funk, SE cor. SW SW SE, Section 19-1-8w, is drilling at 901 feet. Carter Oil Co.'s No. 1 Ida McDonald, NE cor. NW, Section 28-2s-7w, has been completed for 12 bbls. in sand 1,682-87 feet.

Wagoner County

Bailey and others' No. 1 Replogle, SW cor. NE SE NE, Section 31-19-16, is shut down at 645 feet. J. W. Edwards' No. 1 N. Davis, SW cor. NW SW, Section 22-17-16, is drilling at 500 feet. Bryan Petroleum Co. moved a machine in for No. 2 N. Jackson, CSL NE SE, Section 33-17-16. Brasheers and others' No. 1 E. Darnst, CWL SW, Section 12-17-17, is spudding. J. W. Edwards and others' No. 1 L. Jackson, NE cor., Section 4-16-16, is spudding. Cherokee Public Service Co.'s No. 1 R. Verner, NW cor. SE SE NE, Section 36-16-17, is an old well rigging up to deepen from 862 feet.

Garfield County

Shell Petroleum Corp.'s No. 1 Loomis, C NW NW, Section 32-23-4w, was abandoned in Wilcox sand at 5,990-6,185 feet as a dry hole. Continental Oil Co.'s No. 1 Meisner, SE cor. SW NW, Section 10-20-4w, made 380 bbls. from the Wilcox sand at 5,900-34 feet after a 40 and 60-quart shot.

Kay County

Martin and others' No. 1 Garrett, NE cor. SW SE, Section 31-27-2, was abandoned at a total depth of 680 feet.

Woodward County

Burgoyne Brothers' No. 1 Marklin, SW cor. SE NE, Section 15-21-19w, was abandoned at 1,910 feet as a dry hole.

Noble County

Continental Oil Co.'s No. 1 Laverton, C SE SE, Section 32-21-1w, is a rig. Twin State Oil Co.'s No. 1 Trussell, NE cor. SW, Section 4-20-1w, is a rig. Empire Oil & Refining Co.'s No. 1 Fraler, SW cor. NW NE, Section 4-20-1w, was drilling at 2,000 feet. K. D. Oil Co.'s No. 4 White, C N half SE, Section 1-22-2w, was abandoned at 5,528-57 feet after finding water.

QUEER HOBBY PICKED OUT BY J. R. SUMAN

(Continued from Page 41)

man. "Every item in the whole process of bringing petroleum to the surface must be 100 per cent efficient if we are to hold our own. There must be no guesswork where accurate conclusions are possible, no willy-nilly operations where order and system can be installed, no half-efficient tools where research points to better ones."

All the things accomplished by Mr. Suman have not been in the field of petroleum production. For instance, the swiftest 25-yard dash in running annals is declared to have been scored by him in 1926 while he was general superintendent in Texas for the Associated Oil Co. The feat was not recognized officially by the A.A.U. and does not appear in published records of athletic events, but that does not detract from the luster of the performance.

This Must Have Been Worth Seeing

Assisted by James Hutcheson, then superintendent under him, Mr. Suman was bringing in a gas well in the Laredo Field. They had set two joints of 4-inch liner with packer in the well. The liner had only 1 foot of perforation at the bottom of it. Then they bailed the well and it came in making an estimated 75,000,000 feet of natural gas. The valve was opened straight up the derrick to enable the men to measure the volume of flow with a Pitot tube. While Harry Wright, lease foreman, went onto the derrick floor to get the measurement Mr. Suman walked to a point about 100 feet distant with a camera to take a picture of the well.

The roar of the escaping gas drowned all other sounds. Mr. Suman noted a sudden lull. When the noise was resumed he saw a great cloud of sand fill the derrick and rise above the top of it. As he watched the spectacle he discerned an object—it looked like a lead pencil—high in the air above the cloud of sand. It seemed to be about 700 feet from the ground. As he gazed wonderingly he observed that it was white at one end. Suddenly he realized that he was looking at the 40 feet of liner and that the white area was the packer. The thing was precisely over his head. It would strike the earth in a few seconds and—

The only thing that offered any semblance of protection was the toolhouse. It was made of 1-inch boards only, but this was no time to fuss over details. The straight line which the geometry of his schooldays had declared to be the shortest distance between two points was an aimlessly meandering thing by comparison with the one which the general superintendent of the Associated Oil Co. made in getting to that toolhouse. Occupied though they were with their own affairs at this juncture, others took amazed note of his speed and zeal. All agreed that the velocity of his flight made existing sprinting records look like a Sunday afternoon stroll.

No Wonder the Fireman Thought So

The general superintendent executed a dive through the doorway of the toolhouse, sliding on his stomach over the greasy floor. He made strange signs to the astonished fireman who happened to be in the building, intended to convey to that person that if he cared anything about the preservation of his anatomy intact he should drop on his stomach too. The fireman concluded that his chief had gone crazy and wondered what he had better do about it.

While Mr. Suman was making wild gesticulations from his undignified position on the floor the 40 feet of pipe struck a few yards from the toolhouse, tearing a gash in the earth 10 feet long and 18 inches deep. When the liner had been wrenched from the bottom of the well by the terrific force of gas it had shot up through the casing and then through the wooden derrick with the directness of an arrow, passing between the crownblock and the water table—a space offering an opening scarcely a foot wide—without touching either.

In December, 1912, Mr. Suman married Miss Beatrice Mowers, of Los Angeles. They have two sons. Mr. Suman is active in the production division of the American Petroleum Institute and for the first two years after it was organized he was its chairman. He is national chairman of the pipe standardization committee and vice chairman of the pumping equipment standardization committee of the institute.

"I look upon the work of the production division of the A.P.I. as of supreme importance and I expect it to result in the saving of millions of dollars," said Mr. Suman.

Other organizations of which Mr. Suman is a member are the California Academy of Science, American Association of Petroleum Geologists, American Institute of Mining & Metallurgical Engineers, the Houston Country Club and the University Club of Houston. He is a Knight Templar and a member of the Delta Upsilon Fraternity. He has written many articles on petroleum engineering subjects and is the author of the book, "Petroleum Production Methods."

Here's One They Tell

The standardization committees of the A.P.I. used to hold annual meetings in the Broadmoor Hotel, Colorado Springs, in June. The Broadmoor has a magnificent golf course and June affords ideal golfing weather. A golf tournament was a regular feature of the meetings and about 20 prizes were hung up, every one handsome and well worth winning. The fixing of handicaps was always in the hands of Mr. Suman, whose decrees had the inexorable quality of a czar's.

At the close of each tournament the man who had just missed winning one of the prizes—and there were many of him—was likely to proclaim to listeners in the shower room: "If it hadn't been for that handicap of 16 strokes I'd have won dead easy. How in so and so did Suman figure a handicap like that for me? Must have thought I was Bobby Jones."

Well, anyway, they quit holding the committee meetings in Colorado Springs and they quit holding them in June. The meetings are held in Chicago now, and in winter! Golf? Not a chance. And there are those who will tell you the change came about through machinations of the D.O.S.H.V. You know, Discomfited Order of Suman's Handicap Victims. But you can't tell. It's easy to start such stories and one ought to hear both sides.

WEST TEXAS FIELDS

(Continued from Page 71)

Jones, top pay 3,750 feet, total depth 3,823 feet, plugged back to 3,817 feet, shot 40 quarts from 3,788-3,808 feet, shot second time with 120 quarts from 3,736-66 feet, initial production 122 bbls.

Garza County

M. L. Richard's No. 1 Stoker, dry and abandoned, total depth 3,050 feet.

Lynn County

George McCamey and others' No. 1 Edwards, dry and abandoned, total depth 5,284 feet.

Pecos County

World Oil Co.'s No. 1-D University was completed September 6, 1930, at 1,746 feet for 52 bbls.; deepened to 1,775 feet encountered sulphur water; plugged back to 1,769 feet, initial production 30 bbls. per day flowing through 2½-inch tubing.

Tom Green County

Ellis and others' No. 3 Lewis, dry and abandoned, total depth 1,198 feet.

Val Verde County

A. Blum's No. 1 Yoss, location abandoned.

Crane County

Gulf Production Co.'s No. 80 McElroy, top pay 2,775 feet, initial production 362 bbls., total depth 2,985 feet. Same company's No. 81 McElroy, top pay 2,789 feet, shot 240 quarts 2,789-2,944 feet, initial production 40 bbls., total depth 2,944 feet. Same company's No. 82 McElroy, top pay 2,790 feet, initial production 185 bbls., shot 340 quarts 2,790-2,976 feet, total depth 2,976 feet.

Master's Summary in Vacuum Case

Necessary to Prove Violation of Dissolution Decree Not of Sherman Antitrust Act. Important Distinction

By Charles E. Kern
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., Sept. 15.—The Government is proceeding on the theory that it is necessary to prove only that the proposed merger of the Standard Oil Co. and the Vacuum Oil Co. is in violation of the decree of dissolution rendered by the Supreme Court of the United States in 1911 and it is not necessary to prove that the merger violates the Sherman Antitrust Law of 1890, states Fred L. Williams in a summary of the evidence taken before him as special master and prepared for submission to the court and just made public here by the Department of Justice.

The proceeding, instituted through a supplemental bill filed by the United States in the old Standard Oil trust case, seeks to enjoin the two companies from calling a stockholders' meeting for the purpose of voting upon the approval of a merger contract on the ground that "said contract, if carried out, will completely eliminate all existing and potential competition between the two defendants in interstate and foreign commerce in petroleum and its products and will violate the provisions" of the dissolution decree of 1911.

The original suit was instituted in 1906 against the Standard Oil Co. of New Jersey and 70 other corporations to enjoin the continuance of an alleged illegal combination in violation of the Sherman Antitrust Act. The final decree, as modified by the Supreme Court of the United States, found 44 of the original defendants guilty of the alleged violations. Among these 44 were the Standard Oil Co. of New York and the Vacuum Oil Co. The decree was followed by a dissolution of the combination, as a result of which all the companies became independent organizations.

Contentions Detailed

The different contentions relative to the interpretation of that decree are detailed by Mr. Williams in his summary as follows:

"In his opening statement, the assistant to the Attorney General said, in part: 'As disclosed by the answer of the defendants, it is the theory of the defendants that it is incumbent upon the Government to show that the proposed transaction here sought to be enjoined would be a violation under the Sherman act. It is our theory that it is only incumbent upon the Government to establish that the proposed transaction falls within the terms of the decree and is a violation of the decree. . . . The proof to be offered by the Government concerns chiefly the allegations contained in sections 5 and 8 of the supplemental petition.' (Sections 5 and 8 allege in substance that the proposed merger will eliminate all existing and potential competition between the two companies and will violate the 1911 decree.)

Defendants' Stand

"Counsel for defendants, in his opening statement, said in part: 'The issue between the defendants and the Government in the interpretation of the language of section 6 (of the decree) is this: . . . The defendants contend that the decree forbids . . . the conveyance of the physical property and business of one of the former subsidiaries to another potentially competitive former subsidiary . . . only when such acts will effect a combination or conspiracy like that terminated by the decree in this suit in violation of the Act of July 2, 1890 (The Sherman Antitrust Act). . . . The Government, on the other hand, claims that to show a violation of the decree is not necessary to show a violation of the Sherman law . . . If the Government's interpretation is adopted, the material facts are very simple and are admitted."

Facts Simple

Mr. Williams pointed out that there is little, if any, serious conflict concerning the facts of the case. On this subject his statement follows in full text:

"The terms of the contract of merger, the consummation of which the Government seeks to prevent, are admitted by the pleadings. In substance the contract provides: (1) for changing the name of the Standard Oil Co. of New York to General Petroleum Corp., or other name to be agreed upon; (2) two subsidiary corporations of General Petroleum Corp. will then be formed under the respective names of Standard Oil Co. of New York, Inc., and Vacuum Oil Co., Inc., to carry on the business now conducted by the two defendant corporations; (3) Vacuum Oil Co. will sell and convey all its assets to General Petroleum Corp. and each stockholder of Vacuum Oil Co. will receive three shares of General Petroleum Corp. for each share of Vacuum, and Vacuum Oil Co. will thereupon become dissolved and its affairs wound up.

"It is admitted by the answer that meetings of the respective stockholders to vote upon the contract of merger will be called and that the merger will be effected unless enjoined by the court."

In the summary of the evidence are detailed the comparative standings and interests of the two companies. It was pointed out in the answer of the defendant companies, filed with the court, that the object of the merger is to help the two corporations to meet their needs in this country and abroad by availing themselves of the complementary resources and facilities of each.

"Abroad," Mr. Williams states in his summary, "Vacuum comes into competition with Socony in the sale of gasoline and kerosene in the relatively small markets of Syria, Silicia, Jugoslavia and the Islands of Cyprus and Rhodes. . . .

Concerning Competition

"Vacuum does a large business in gasoline abroad, but, except as above indicated, its gasoline business is in countries where Socony does not sell gasoline. Both companies do a fair-sized business in kerosene abroad but the business of each is done in countries in which the other does not sell gasoline.

"The overlapping of foreign territory in the sale of lubricants," he said, "is larger than is the overlapping in the foreign sales of other products. However, in some of the types of lubricants there is no overlapping and the extent of overlapping varies with the various types of lubricants."

Both defendants, it is stated, compete in the sale of gasoline in New York. "Of the total consumption of gasoline in New York in 1929 Socony sold 33.7 per cent thereof and Vacuum 1.8 per cent. The same comparison in Wisconsin shows Socony selling 1.1 per cent and Vacuum 1.5 per cent of the Wisconsin estimated total consumption.

"Vacuum lubricating oils are sold in every state. Socony sells lubricating oils in New York, New England and in every state west of the Mississippi, except Idaho."

This testimony was offered to show a lack of any material destruction of competition and therefore lack of ground to complain that the Sherman antitrust act would be violated by the combination, all of which is combatted by Mr. Williams by insisting that the only controlling question is confined to a violation of the decree of the Supreme Court which in 1911 found that 44 of the original defendants in that case were guilty of the alleged violations of the Sherman antitrust law, the Standard of New York and the Vacuum being among them. In other words he gave no consideration to changed conditions in the business world which might not and probably would not be interpreted as restraint of trade at this time.

Tendency Towards Integration

Mr. Williams pointed to the fact that "the economic tendency in recent years has been toward the formation of integrated companies." Relative to this he quoted the testimony of Dr. John W. Frey, a trade specialist, at present the chief of the petroleum section, minerals division of the Bureau of Foreign and Domestic Commerce of the United States Department of Commerce.

Mr. Frey said, "The tendency toward integration by the oil companies has been most conspicuous in recent years. This integration has passed national boundaries and entered an international phase of development. One of the salient causes of such integration is the lack of security in obtaining profits in any one branch of the industry, for instance, cheap crude may mean a loss to the producer, but a profit to the refiner and marketer. The opposite holds true. Such integration has made it possible for companies to take losses in one department and make up the deficit in another, the investment as a whole being thereby strengthened. Integration gives added security for the refiner and marketer, and an outlet for products to the producer."

"This tendency and 'practice on the part of major companies is constantly adding to their own outlets, and thereby reducing the number of points at which Vacuum automotive products can be made available to the public,' " Mr. Williams said, "is the most important reason which prompts Vacuum to enter the merger so far as its domestic business is concerned."

He added, "the resources of the two companies would complement each other in various countries abroad, noticeably in India, where Vacuum has an established good will in lubricants and an experienced and trained organization."

IMPORTS AND EXPORTS OF CRUDE AND REFINED OILS IN PRESENT YEAR

By C. E. Kern
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., Sept. 15—Imports of crude petroleum into the United States for the seven months of 1930 ending with July aggregated 37,006,274 bbls. valued at $38,796,296 compared with 49,973,923 bbls. valued at $49,515,223 during the same period of 1929, according to the monthly summary of foreign commerce by the Department of Commerce.

During July, 1930, imports of crude oil aggregated 5,876,946 bbls. valued at $5,849,945 compared with 6,122,358 bbls. valued at $5,931,326 in the same month of the previous year.

Imports of crude oil during July, 1930, consisted of 1,246,000 bbls. valued at $985,043 from Mexico; 1,054,135 bbls. valued at $789,056 from Netherland West Indies; 987,000 bbls. valued at $1,401,540 from Colombia; 2,476,485 bbls. valued at $2,513,229 from Venezuela and 113,326 bbls. valued at $161,077 from other countries. There were no importations from Peru in July although during the six months ending June imports from that country aggregated 710,000 bbls. valued at $1,593,000. Imports from the other countries in July, 1930, were changed but little except in the case of Colombia which increased the quantity of oil sent to the United States from 792,000 bbls. in July, 1929, to 987,000 bbls. in July, 1930, and Venezuela which decreased from 2,934,965 bbls. in July, 1929, to 2,476,485 bbls. in the same month of 1930. Venezuelan exports of crude oil to the United States during the seven-month period were decreased from 21,633,902 bbls. in 1929 to 15,888,258 bbls. in 1930.

The monthly summary shows a marked increase in the importation of "advanced and refined oils" both for the seven-month period and for July. During the seven-month period of 1929 the quantity imported aggregated 14,171,943 bbls. valued at $36,754,430 compared with 25,564,222 bbls. valued at $46.592,066 in the same period of 1930. During July, 1929, importations of this class of oil which includes all oil that had been subjected to any kind of refining amounted to 3,160,614 bbls. valued at $5,058,444 compared with 4,034,632 bbls. valued at $7,737,620 in July, 1930. It will be observed that the value of this "advanced and refined oil" in July, 1929, was a trifle over $1.60 per barrel while the declared value of the same class of importations in July, 1930, was a little more than $1.91 per barrel. However during the seven-month period the average declared value of the class of oil was decreased from $2.52 per barrel in the seven months of 1929 to $1.80 per barrel in the same period of 1930.

During July importations of gasoline amounted to 933,845 bbls. valued at $3,416,155 compared with 1,740,873 bbls. valued at $6,078,184 in July, 1930. During the seven-month periods the increase was from 4,415,507 bbls. valued at $27,880,712 in 1929 compared with 9,898,655 bbls. valued at $34,825,802 in 1930.

Most of the gasoline imported in July came from the Netherland West Indies the quantity in July, 1929, being 841,517 bbls. and in 1930 it was 1,621,445 bbls.

Crude petroleum exported from the United States in July, 1930, amounted to 1,973,084 bbls., valued at $2,760,103, compared with 3,116,568 bbls. valued at $4,626,619 in July, 1929. When the seven-month periods of 1929 and 1930 are compared it will be seen the quantities of crude exported are practically the same being 14,632,540 bbls. in the seven month of 1929 ending July compared with 14,065,239 bbls. for the similar period of 1930.

Refined oils exported in July, 1930, amounted to 10,305,418 bbls. valued at $38,056,420 being a decrease compared with July, 1929, when the quantity was 11,626,748 bbls. and the value was $45,552,527.

During the seven-month period exports of refined oil amounted to 75,787,903 bbls. valued at $279,513,502 in 1930 and 72,600,957 bbls. valued at $288,303,147 in the seven months of 1929.

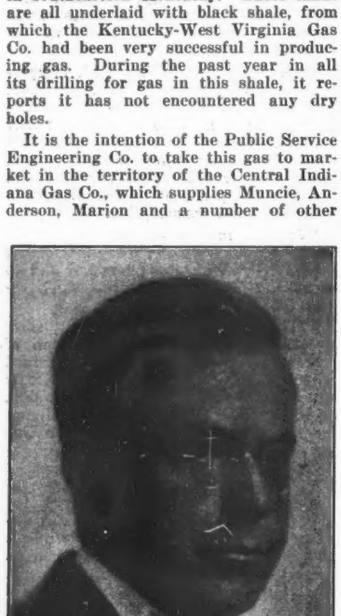
Gasoline exported in July, 1930, aggregated 5,510,746 bbls. valued at $22,458,293 compared with 5,974,946 bbls. valued at $26,136,021 in July, 1929. Gasoline exports increased during the seven-month periods from 34,278,676 bbls. in 1929 to 39,022,095 bbls. in 1930.

Pipe Line Construction News

FURTHER DETAILS ABOUT KENTUCKY-INDIANA LINE

The Public Service Engineering Co., a subsidiary of the Central Public Service Corp., has made a contract with the Kentucky-West Virginia Gas Co., under which contract the Public Service Engineering Co. takes over for operation approximately 132,000 acres of gas lands in southeastern Kentucky. These lands are all underlaid with black shale, from which the Kentucky-West Virginia Gas Co. had been very successful in producing gas. During the past year in all its drilling for gas in this shale, it reports it has not encountered any dry holes.

It is the intention of the Public Service Engineering Co. to take this gas to market in the territory of the Central Indiana Gas Co., which supplies Muncie, Anderson, Marion and a number of other



Alfred Hurlburt

smaller communities. In this part of Indiana there are located many industrial plants offering a good market for natural gas. Chiefly among these plants are glass manufacturers, and ceramics, and steel treating. There are also a large number of towns adjacent to the proposed pipe line which should supply an additional market, as there are industries located therein of the same character as is to be found around Muncie, Marion and Anderson.

The Central Indiana Gas Co., which is a subsidiary of the Central Public Service Corp., in itself offers sufficient market to justify the line.

This new company has just opened offices in the Guaranty Trust Co. Building in Lexington, Ky., and the operating head is Alfred Hurlburt, who has had charge of natural gas in the Chicago office, who also had charge of the introduction of natural gas into Atlanta and the other southern cities. He will be assisted by R. C. Hardy, in charge of accounts, L. D. Poulter, purchasing agent, Maurice Adams, engineer and R. M. Shearer, general assistant.

It is hoped that by September 25 actual survey will be started on this new line and that construction work will be started about October 1.

The work plan consists of approximately 100 wells to be drilled within the year and the necessary field and connecting lines from these wells to a compressor station site. It is not thought necessary at this time to build the com-

(Continued on Page 118)

EXTENSIONS IN GEORGIA

The natural gas transmission line of Southern Natural Gas Corp. reaching from Atlanta to Macon has been completed and natural gas is now available for distribution in Macon by the local company, according to an announcement by Natural Gas Engineering Corp., which has constructed the lateral from which extensions will be made.

In addition to having natural gas at Macon, it is announced connection was made at Griffin, between Atlanta and Macon. This line, which is one of the trio of major extensions in 1930 of Southern Natural Gas Corp., is 105 miles long. From Atlanta to Griffin is 12-inch pipe and south through Macon to about 15 miles east of Macon is 10-inch, and from the end of 10-inch pipe the line is 8⅝-inch to Milledgeville. Extensions from this line include 6-inch branch from the end of 10-inch line to McIntyre, Georgia, and 4-inch line which runs to Dry Branch. A 4-inch line also serves Forsyth, and a 6-inch lateral will serve Griffin.

CENTRAL NATURAL GAS

Central Natural Gas Corp. has been incorporated in Indiana as a subsidiary of Central Public Service Corp. to take over the latter's Kentucky-Indiana pipe line. The Central Natural Gas Corp. will engage in both the producing and piping of natural gas, taking over contracts previously held by the Public Service Engineering Co. Central Natural Gas Corp. has a nominal capitalization of 2,000 shares of stock authorized, but all stock outstanding is owned by the Central Public Service Corp.

INTERSTATE PIPE LINES

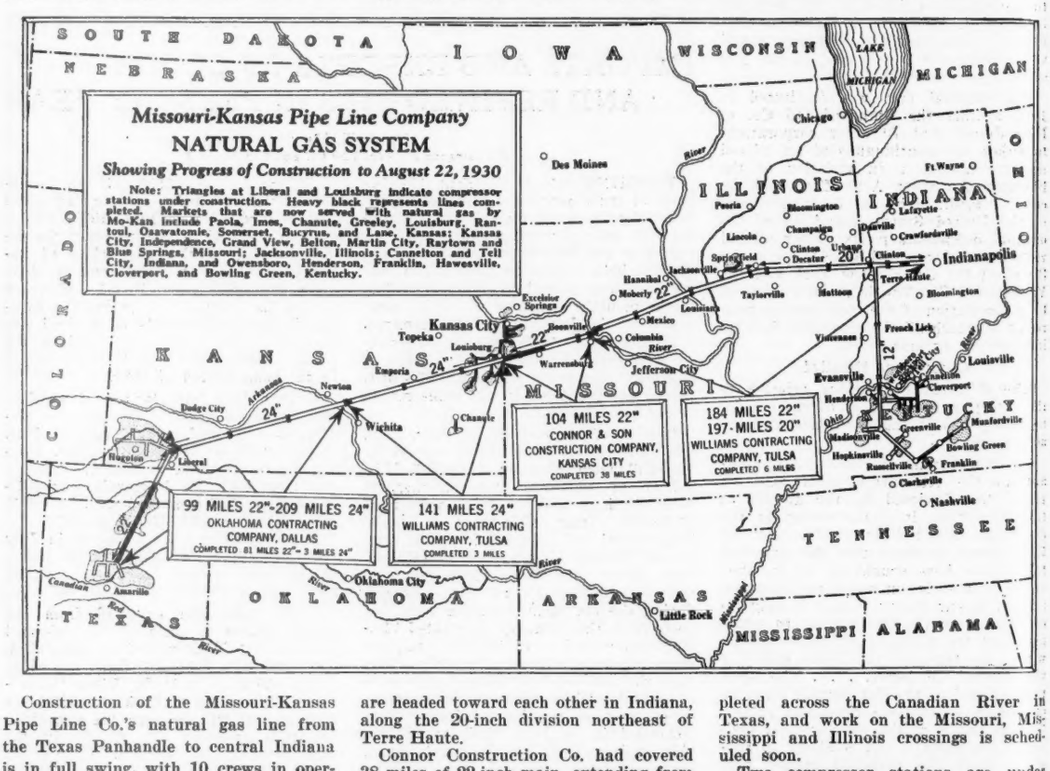
WASHINGTON, D. C., Sept. 15.—In conformity with a decision by the United States supreme court holding that interstate oil and gas pipe lines do not come under the jurisdiction of State public service commissions the right to lay interstate pipe lines rests with the Interstate Commerce Commission.—C. E. K.

AUGUST STEEL OUTPUT ABOUT SAME AS JULY

PITTSBURGH, Pa., Sept. 15.—Production of Bessemer and open-hearth steel ingots in August is officially reported at 3,095,293 gross tons, representing 59.46 per cent of capacity. Technically the two months are rated as 26 working days each and nominally there was an increase of 5.5 per cent in tonnage output, but practically, allowing for the interruption by the holiday in July and for the extra Sunday in August as some plants do produce steel on Sunday, there was substantially the same operating rate in the two months.

Demand for standard or merchant pipe is light, and somewhat under that of last spring. There is some running demand for seamless oil country goods but practically none for lap weld. Producers of line pipe, in fire weld, electric weld and seamless, are estimated to be sold up for about 60 days in 8 or 10-inch and larger sizes.

PROGRESS ON MISSOURI-KANSAS PIPE LINE CO.'S PANHANDLE-INDIANA LINE



Construction of the Missouri-Kansas Pipe Line Co.'s natural gas line from the Texas Panhandle to central Indiana is in full swing, with 10 crews in operation. Thus, 81 of the 99 miles of 22-inch main line from Stinnett, Tex., to Liberal, Kans., was underground and another outfit had laid several miles of 24-inch main east from the Liberal compressor station. The Oklahoma Contracting Co. is building 308 miles of 22-inch and 24-inch line from Stinnett to Newton, Kans.

Williams Contracting Co. had seven crews in action. Two are laying gathering lines through Missouri-Kansas's gas fields in the Panhandle. A third crew had completed several miles of 24-inch main east from Newton, and a fourth outfit reports similar progress west of Louisburg, Kans. In Missouri, Williams has started construction on the 22-inch line east of Boonville and two gangs are headed toward each other in Indiana, along the 20-inch division northeast of Terre Haute.

Connor Construction Co. had covered 38 miles of 22-inch main, extending from Louisburg east toward Boonville, and pipe is on hand at Pearl, Ill., for crossing of the Illinois River near Montezuma. Likewise, pipe has been shipped to sidings along the route of the 12-inch line from the Ohio River north through Indiana to a junction with Missouri-Kansas's trunk system from the Panhandle. In Kentucky consistent progress is also reported on the 10-inch line from the Ohio south to Madisonville.

Important river crossings have been completed between the Panhandle and Kentucky. Ten-inch multiple lines have been laid across the Beaver in Oklahoma, and Cimarron and Arkansas Rivers in Kansas and 8-inch lines span the Ohio River bed east of Evansville and the Wabash crossing is under way. The first of four 10-inch multiples has been completed across the Canadian River in Texas, and work on the Missouri, Mississippi and Illinois crossings is scheduled soon.

Two compressor stations are under construction by Fluor Co., Ltd., at Liberal and Louisburg, Kans. The Liberal plant is on the north shore of the Cimarron River 12 miles northeast of Liberal, and installation of four compressor units of 1,000 horsepower each is under way. A huge cooling tower has been erected and the cement work is practically finished. The 22-inch intake and the 24-inch discharge lines have also been completed.

At Louisburg the compressor equipment will comprise five units of 1,000 horsepower each. An 80-acre tract has been acquired and construction of a dam to impound 40,000,000 gallons of water to cool the gas after compression is well advanced. A third compressor station will be erected by Missouri-Kansas somewhere east of the Mississippi.

New Southwest Pennsylvania Gas Area

Wildcat in Somerset County, 15 Miles From Production, Has Open Flow of 750,000 Feet With 800 Pounds Rock Pressure

By Special Correspondent

PITTSBURGH, Pa., Sept. 15.—In southwest Pennsylvania an interesting wildcat was reported which has possibilities of opening up a new gas field. The American Natural Gas Co. drilled in a well on the O. S. Moore farm, Quemahoning Township, Fayette County, and about 5 miles north of Somerset. This well is 15 miles from the nearest production. It was completed to what is believed the Fifth sand at 2,400 feet and has an open flow of 750,000 feet of gas with a rock pressure of 800 pounds. Pending additional tests, the well was shut in. At present there are two new tests drilling on the structure line and on other farms. The Wittmer Oil & Gas Properties are identified with the American Natural Gas Co.

The summary of completions in the eastern fields for the past week continues to show a decline in operations in southeast Ohio and a slight falling off in West Virginia. During the week several very fair wells were reported from West Virginia and but one in southeast Ohio.

SOUTHEAST OHIO

In Southeast Ohio the largest well reported was in section 2, Jackson Township, Knox County, where the Preston Oil Co. drilled a test on the Samuel Rine farm to the Clinton sand. After shot, it produced 110 bbls. the first 24 hours. The same company brought in a test well on the Mahala Johnson farm, Section 7, Cambridge Township, Guernsey County. It was drilled to the Niagara lime at 3,526 feet and produced 25 bbls. the first 24 hours natural.

In Jefferson County, William Graham & Co. completed a test on the O. Dennis farm, about 2,000 feet south of the wells on the Mills and Blackburn farm, and in the NE of Section 22, Island Creek Township. It was drilled to the Berea at 1,200 feet and made a light showing of oil, and was then shot with 60 quarts cleaning out, but it may not make a pumper. A similar result was reported in the test of C. M. Stratton on the C. M. Stratton farm in the center of Section 18 of the same township. It reached a total depth of 1,400 feet with a light showing of oil in the Berea.

A fair shallow well was reported from Medina County, where in Lot 2, Section 13, Chatham Township, the Oko Oil & Gas Co. completed its No. 41 and on the Henry Essig farm to the Cow Run sand at 385 feet. It produced 10 bbls. the first day after shot. In Meigs County the Great Bend Oil Co. completed a test well on the Mary D. Wolfe farm, Sutton Township, and it is a light gas well, 65,000 feet, from the shale at 3,660 feet.

In Section 33, Independence Township, Washington County, Herlan Schramm and others drilled their No. 14 on the Ephram Cummons farm to the Mitchell sand, 315 feet, and after shot it made 5 bbls. the first 24 hours.

WEST VIRGINIA

West Virginia again came to the front with several fair oil wells drilled in during the past week. The largest reported was in the Clay County Pool, Henry district, Clay County, where the Virginian Gasoline & Oil Co. completed its No. 4,270 or the twenty-eighth on the Brown, Swan and Goshorn to the Big Injun at 1,977 feet and the well flowed 75 bbls. the first 24 hours.

In Hardee district, Mingo County, William P. Floyd drilled his No. 2 on the C. C. Messer farm to the Maxon sand at 1,060 feet and it made 28 bbls. the first day natural. In Boone County the Pure Oil Co. continued its operations on the Lafollette, Robson and Prichard tract A with the completion of the No. 41. It was drilled to the Berea at 2,960 feet and is estimated good for 10 bbls. a day after shot. This well is in Sherman district. In Cabin Creek district, Kanawha County, the Pure Oil Co. completed its No. 252 on the Williams Coal Co. property in the Berea at 3,189 feet and after shot it will make an 8-bbl. well.

In Sheridan district, Calhoun County, M. F. Crawley completed a test well on the Isaac Deems farm to the Salt sand at 1,618 feet and it will make about a 1-bbl. pumper after shot. In Murphy district, Ritchie County, Pope Brothers drilled their No. 8 on the H. S. Wilson farm deeper to 1,720 feet and it is showing for a fair gas well in the gas sand and making about 3 bbls. of oil a day from the Salt sand.

Gas Wells

In Cabell County, McComas district, the Hamilton Gas Co. completed its No. F10 on the R. T. Marin farm deeper in the Brown shale and to a depth of 3,839 feet and it will make a fair gas well. In Calhoun County, F. F. McIntosh and others drilled their No. 2 on the Hamilton and Hunt property, Lee district, to the Injun sand, 1,985 feet, and it is a light gasser natural. In the same district, Godfrey L. Cabot completed No. 708 and on the Manora Starcher farm to the Berea, 2,268 feet, and it is dry.

On the Quincy Coal Co. tract, Cabin Creek district, Kanawha County, Godfrey L. Cabot drilled his No. 21 on that tract in the Weir sand to a depth of 2,220 feet and it will make a light gas well. In Marion County the Owens Illinois Bottle Co. completed its No. 2 on the Charles Toothman farm to the Fifth sand at 2,987 feet and it is showing for a light gasser. This farm is in Paw Paw district. In Mason County, Graham district, near Sand Creek, the Berea Oil & Gas Co. completed its test on the W. P. Newton farm in the Berea sand and it is a gas well good for 700,000 feet. The same company completed its No. 2 on the same farm, also to the Berea, and it is showing for a 1-bbl. pumper. In Monongalia County the Pittsburgh & West Virginia Gas Co. drilled its No. 5,385 on the Armina Bean farm deeper to the Bayard sand, 3,655 feet, and has a fair showing of gas. This is in Battelle district.

In Wayne County the Ohio Southern Gas Co. drilled a test on the G. R. Endicott farm in Lincoln district to the shale at 2,538 feet and it will make a fair gas well. In the same county, but in Union district, C. C. Wolfe is drilling in his test on the Lee Adkins farm and has reached 3,080 feet with a strong showing of gas. In Wetzel County, D. W. Null and others drilled his second well on the W. G. Snodgrass farm, Church district, to 3,335 feet and it will make a gas well. In the same district the Manufacturers Light & Heat Co. completed its No. 3,438 on the Mary C. Pethtel farm at a depth of 2,554 feet and it is also a gas well.

A late completion in Jackson County is the No. 13 of the South Penn Oil Co. on the C. S. McCarty farm in Ravenswood district, and on the waters of Bucks Run of Sandy Creek. It was drilled in the Berea sand and is showing for 10 bbls. a day natural.

Drilling in West Virginia

Boone and Kanawha Counties are still very active and there are many wells drilling but few rigs noted. In Sherman district of Boone County, the Pure Oil Co. is finishing its program with its No. 38 on the L. R. and P. Tract A still drilling, and its Nos. 46 and 48 on the Federal Coal Co. property at 1,275 and 843 feet respectively. In the same district, Godfrey L. Cabot has several strings of tools working on the Federal Coal Co. tract. His No. 28 is down to 2,652 feet, No. 39 at 2,615 feet, No. 41 at 675 feet. On the Bruin heirs farm, Godfrey L. Cabot is drilling his No. 3 at 735 feet. In Crook district, Godfrey L. Cabot has a No. 7 on the E. M. Arbogast, drilling at 1,000 feet and the No. 7 on the Y. & O. Co. property about down to the sand. In Peytonia district, the Owens Illinois Bottle Co. is shut down at 1,813 feet in its No. 7 on the Safe Deposit & Trust Co. property.

In Kanawha County, the Pure Oil Co. has a cementing job on its No. 251 in the Williams Coal Co. property, in Cabin Creek district. In the same district, the Winifred Co. is drilling on its own property.

In Harvey district, Mingo County, the Red Jacket Oil & Gas Co. has completed a rig for its No. 13 on the Consolidated Coal & Coke Co. property. In Meade district, Upshur County, the Union Gas Corp. has its test on the Warren Burr farm, drilling at 1,685 feet. In Washington district, of this county, the C. & A. Gas Co. has its test well on the W. P. Snyder farm shut down at 2,275 feet waiting on water. On Little Sand Run of the same district, Doctor Rasmissell has a fishing job in his test on the M. L. Reeves farm. The depth reached is 240 feet.

In Murphy district, Ritchie County, W. A. Bickerstaff and others have a rig up for their No. 2 on the J. B. Rogers farm. In Grant district, J. W. Jonas is moving his drilling machine to a location for his No. 28 on the West Virginia tract located on Alum Cave.

In Cabell County, W. H. Kirtley & Co. are drilling their test on the Emma Hanley farm in Grant district and are down to 1,600 feet. In the same district, the Harshbarger Oil & Gas Co. has reached 1,800 feet in a test on the W. A. Morris farm and has a rig standing for a test on the James Conner farm. The Larner Gas Co. has reached 1,000 feet and 600 feet respectively in its wells on the Nixon and McCullough farm and the E. M. Chapman farm. In Butler district of Wayne County, the Chartiers Oil Co. is drilling its second well on the Anna Streuber farm and have reached 2,300 feet.

SOUTHWEST PENNSYLVANIA

In the rather spotty district in Harmar Township, near Harmarsville, Allegheny County, the Chemical Oil & Gas Co. completed its No. 2 on the Campbell heirs farm in the 100-foot sand at a depth of 1,675 feet. It made an initial flow of 60 bbls. the first day, though held back by salt water. The second day it flowed 25 bbls. and the casing off of the salt water is being completed.

In Greene County, the Duquesne Gas Corp. drilled a test well on the E. R. Clovis farm to a depth of 3,505 feet, the Fifth sand, and it is reported dry in all sands. This is in Wayne Township.

In South Franklin Township, Washington County, the same company completed a test on the S. Dague farm to the Fifth sand at 2,902 feet and it is making 15 bbls. a day.

KENTUCKY OPERATORS NOW SCOUTING TENNESSEE FOR SUITABLE GAS AREAS

By George A. Whitney

RED BOILING SPRINGS, Tenn., Sept. 14.—The suspension of new oil operations in the Western Kentucky fields has resulted in a number of operators scouring Tennessee for suitable gas areas and scouts are swarming into the tier of counties just over the Kentucky line, and thousands of acres are being leased on long termed and low rental contracts.

Among the latest to invade the State is the Owensboro firm of Ellis & Young, who are drilling at 125 feet on the J. H. Unseld farm, 4 miles northwest of Ashland City, in Cheatham County. This well is in a section that was gone over a few years ago by geologists in the employ of one of the major Mid-Continent producing companies and was thought to have little possibility of making a satisfactory oil showing. This is especially interesting because of the fact that possibly no two other independent operators in Kentucky have been so successful and who have sought or required as little geological advice, and it now remains to be seen whether their luck will follow them into Tennessee. A fishing job retarded operations on this well for nearly a week.

The well of the Jervian Corp. of New York on the Briar Hill Collieries Co., near Wilder, in Overton County, is drilling at 1,461 feet. It is one of three deep tests the company is drilling. The well is on the top of the Cumberland Mountains, better known as the Cumberland Plateau, and is near the old production at Spurrier, which occupies a very interesting place in Tennessee's oil history. In the adjoining county and a few miles southeast of the Briar Hill well, the Columbia Oil & Gas Co. recently took up a large block of leases after a corps of geologists had mapped the area. This portion of the State is covered with the carboniferous formations where several seams of coal exist, but is quite broken and mountainous and deep drilling will be necessary, the Black shale lying from 1,200 to 1,500 feet beneath the hill tops. There is a bare possibility production may be found in some of the Owensboro sands lying just beneath the coal measures or in portions of the Mississippi lime.

Deep Test Near Sparta

The deep test on the Talmadge Keathly farm, 2 miles southeast of Sparta, is drilling at 2,600 feet with several showings of oil reported. The other deep test, 6 miles southwest of McMinville, is shut down at 2,650 feet awaiting orders, with no findings of interest reported.

Martin Garrett's No. 2 well, west of Livingston, is drilling at around 1,000 feet, with several small showings of oil reported. This well is but a short distance south of the large wells of Pratt at Fox Springs.

J. L. Woods' No. 1 near Spivey, on Little Trace Creek, in Clay County, has a bad fishing job at 325 feet. It is the first of three wells to be drilled by John H. McClurkin, well known old-time operator.

T. J. Newell and others are drilling at 575 feet in their No. 2 Oakley, 8 miles north of White Bluff in Dickson County. Wood & Kenyon have reached 485 feet in their No. 1 Turner, a mile north of the Oakley farm. Both of these wells have passed through several gas sands, none of which justified a shot. Evans & Garrison, Owensboro, Ky., operators, are reported to have purchased the Stringfelder 20-acre tract adjoining the No. 1 Oakley and are contemplating moving one of their rigs from Owensboro for an immediate test.

J. V. McGuire is drilling at 740 feet about 1 mile north of Winchester, Franklin County, and estimates the well will already make 250,000 feet of gas. He is aiming at the 800-foot sand found several years ago in an old well near there. The same operator is drilling at 670 feet in a well 12 miles north of Manchester on Nashville Pike. Two good sands were encountered.

2 CYCLE

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Few New Completions in Old Lima Field

Twenty-Five in Central Ohio Area, With 29 New Operations. Small Gas Wells in Indiana. Two Completions in Illinois

By George A. Whitney
Staff Correspondent, Central West Fields

FINDLAY, Ohio, Sept. 15. — A few new completions are reported from the old Lima Field of northwestern Ohio, the best producer being D. B. Buskey's No. 4 near the northwest corner of the Nathan Taylor farm, NE, Section 25, Allen Township, Hancock County, with an initial production of 24 bbls. Trenton was topped at 1,305 feet and drilled 125 feet into the sand to a total depth of 1,430 feet. Robert Mitchell, trustee, has drilled in No. 3 well 400 feet from the north line and 800 feet from the east line of the R. W. Moore farm, NW, Section 21, Biglick Township, same county, with an initial of 20 bbls. Trenton was found in this well at 1,270 feet and drilled 135 feet in the lime to a total depth of 1,405 feet.

Chidester, Baldwin and others' No. 10 well, 1,103 feet from the south line and 1,150 feet from the east line of the W. P. Noble farm, NW, Section 4, Henry Township, Wood County, pumped 4 bbls. in 24 hours. Trenton was topped at 1,200 feet and drilled 290 feet in that formation to a total depth of 1,490 feet.

Kenton Field

In the Kenton Field of Hardin County, Charles Aber's second test on the Minnie Kahler farm, SE, Section 7, Pleasants Township, reported a fair gas well in the Trenton from 1,320-52 feet. The Kemrow Co. has a fair gas well on the C. W. Faulkner 160 acres, Section 14, Cessna Township, same county. Eagon & White have a fair gas well in the Adam Strange farm, Section 14, same township, from 1,356-1,457 feet, or 101 feet in the Trenton.

Newcomer and others found a nice gas well on the Harrison Feeley farm, Section 5, Crane Township, Wyandot County. Top of Trenton was found at 1,365 feet and drilled 40 feet in the sand to a total depth of 1,405 feet.

The second test being made by Dillon & Weed on the D. C. Teft farm, Section 32, Monclova Township, Lucas County, west of Maumee, is being closely watched by outside operators, and if this proves as good as the initial well will mean additional tests over quite an area that has been taken under lease recently by Cleveland operators and others.

Barnaby and others are reported drilling on the John Feigelist farm, Section 29, Eden Township, Seneca County, in the Tiffin Field.

CENTRAL OHIO

Twenty-five completions were reported from the Central Ohio Field for the past week of which 6 were dry holes, 13 gas wells and 6 producers with an initial production of 129 bbls. In new work there were 7 locations made and 22 wells started spudding, a total of 29, the new work showing a decrease from the previous week.

In Ashland County, Jackson Township, the Ohio Fuel Gas Co. has a good gas well in No. 1-5,234 Wade Welch farm, Section 28. Same company has a gas well in No. 1-5,223 on the P. C. Moffett farm, Section 32, Orange Township. Blair and others' test on the Henry Smith, Section 32, Mohican Township, was dry in the shallow sand from 627-32 feet. Robinson and others' No. 1 C. I. Sellers farm, Lake Township, is reported good for 3 bbls. in 24 hours, and the same parties found a duster in a second test on the D. and B. Hirschler farm, Section 7, Vermillion Township, there only being a rainbow showing from 659-83 feet. Same parties are drilling No. 1 Elza Sheriff, Section 18, same township. The Kemrow Co. is drilling on the Leroy Shaw farm, Section 36, Clear Township, same county. In Hanover Township, the Ohio Fuel Gas Co.'s No. 1-5,254 William Baum farm, Section 31, was dry. Trout and others are drilling No. 4 Mabel V. Heifner, Section 12, Mifflin Township.

In Medina County, Chatham Township, the Oko Oil & Gas Co.'s No. 39 Henry Essig, Lot 13, pumped 10 bbls. initial from the Cow Run sand at 380 feet, and No. 27 T. W. Brinker, Lot 10, pumped 10 bbls. J. R. Kommer's No. 5 J. A. Krugle farm, produced 5 bbls. initial from 565 feet. Barnhart and others are starting No. 3 Joseph Funk, Lot 6, Harrisville Township.

In Lorain County, J. W. Cushing is drilling on the Catherine Kolb farm, Section 14, Carlisle Township.

In Wayne County, Chester Township, Hulse & Kundtz's test on the William Lewis farm, Section 19, is a light gas well from 3,068-77 feet, and they are drilling No. 1 Peter C. Firestone farm, Section 18, same township.

In Holmes County, Ripley Township, the Ohio Fuel Gas Co.'s No. 3-3,028 James Alexander farm, Section 15, is a gas producer.

Ashtabula County

In Ashtabula County, Kingsville Township, the Ohio Fuel Gas Co.'s No. 1-5,229 on the Willie and Jesse Rose farm, Lots 9 and 16, is a gas well. Same company's No. 1-5,221 John Dunnick farm, Lot 28, Sheffield Township, is down to 3,075 feet with a fair gas showing.

In Richland County, Ohio Fuel Gas Co. is drilling No. 1-5,269 J. E. Dunn, Sections 34-35, Worthington Township, and is drilling No. 1-5,307 W. C. Harris, Section 25, same township.

In Knox County, Ohio Fuel Gas Co. has a gas well in No. 2-5,255 on the Thomas E. Doup, Sections 5 and 17, Brown Township. Harvey G. Hammond's No. 8 H. G. Hammond, Section 23, Union Township, is a dry hole.

In Coshocton County, Pike Township, McClay Brothers have a light gas well in a second test on the Perry Ashcraft farm, Section 15, and the same company's No. 1-5,201 C. A. Thompson farm, Lot 14, Monroe Township, is a light gas well with a small oil showing at 3,567 feet.

In Summitt County, Green Township, East Ohio Gas Co. has a gas well on the L. T. Povlacs farm, Section 17, from 4,128-52 feet.

In Licking County, Fallsburg Township, McClay Brothers' No. 2 U. G. Porter farm, Section 3, is reported with an initial of 95 bbls. from a depth of 2,998 feet. Armbruster & Stickler are drilling No. 4 William Stickler farm, in Mary Ann Township.

In Muskingum County, Newton Township, A. B. Colgan and others' No. 1 William H. Combs farm, Section 32, was dry from 3,418-68 feet. The Atha Co. tore down its rig for No. 3 on the L. M. Bryan farm, Section 20, Perry Township, same county.

In Athens County, Ames Township, the Ohio Fuel Gas Co. has a gas well in No. 4-5,277 John T. Fleming farm, Section 3. In Berne Township, same company has a gas well in No. 3-5,287 Flora Fleming farm, Section 36, in the Berea sand at 1,653 feet. Carpenter & Glazer's No. 11 H. D. and C. C. Curtis farm, fractional Section 33, found the Wolfe Creek sand from 62 to 72 feet in depth and going to a total depth of 175 feet, the Cow Run sand, at 175 feet, is showing 1-bbl. initial. In Carthage Township, Ohio Fuel Gas Co.'s No. 1-5,231 W. E. Day farm, Section 19, was a duster at 1,253 feet. Orange Gas Co. is drilling No. 3 S. R. Coon, same section. Park Bowser and others are drilling on the Fred W. Cooley farm, Section 26, Alexander Township. In Cannan Township, Nuzum and others' second test on the Elmer Halbert farm, Section 8, produced a fair gas well in a stray sand from 541 to 543 feet.

Stark County

In Stark County, Lake Township, East Ohio Gas Co.'s No. 1 Harry Alexander farm, Section 32, is a light gas well at 4,558 feet.

In Tuscarawas County, Oxford Township, the Traders Oil & Gas Co. is starting a second test on the Ellen M. Couts farm, Section 21. Capital Drilling Co. is starting No. 4 Lewis Little farm, Section 32, Washington Township.

In Fairfield County, Richland Township, Patton & Bishop are drilling a second test on the John A. Kennedy farm, Section 29.

In Guernsey County, Ernest Walters and others are drilling on the Charles Messer farm, Section 20, Westland Township. East Ohio Gas Co. is drilling a second test on the J. and R. Gadd farm, Section 5, Monroe Township. George Jewell and others are drilling on the S. L. Beal heirs farm, Section 12, Wheeling Township, same county.

In Belmont County, C. D. Crouch and others are drilling No. 4 Anna S. Luton farm, Sections 14 and 20, Colerain Township. M. Fulton and others are drilling No. 3 Howell-Dement farm, Section 1, Somerset Township.

In Pike County, Beal Township, Bachelor & DeVitt are drilling on the J. D. Shilling farm, Section 32.

In Morgan County, Ohio Fuel Gas Co. has a light gas well in No. 1-5,208 C. B. McInturf, Section 3, Penn Township, in the Berea at 1,676 feet.

Three additional wells have been completed in the Chatham Field, in Chatham Township, Medina County. The Oko Oil & Gas Co.'s No. 40 Henry Essig, Section 13, pumped 20 bbls. at 294 feet, and No. 28 T. W. Brinker farm, Section 16, pumped 10 bbls. from 332 feet. J. R. Kommer's No. 6 J. A. Kruggle farm, Section 18, same township, pumped 8 bbls. initial at 540 feet.

INDIANA

The wildcat of Thomas & Ellis, Owensboro, Ky., operators, on the Alva Marts farm, Section 32, Curry Township, Sullivan County, in western Indiana, was drilled to the Niagara limestone at a total depth of 2,420 feet, and then plugged back to a depth of 600 feet, where a showing of gas was found amounting to an open flow of but 25,000 feet, and the gas is being saved. In Hamilton Township, same county, G. G. Billman and others' test, 200 feet from the north line and 1,120 feet from the west line of the Sam Connor farm, SE SW Section 9, found a gas pay at 600 feet after drilling deeper and plugged back to the gas sand

(Continued on Page 114)

GAS OPERATORS BUSY IN KENTUCKY; THREE COMPLETIONS IN OHIO COUNTY

By George A. Whitney
Staff Correspondent, Kentucky-Tennessee

OWENSBORO, Ky., Sept. 13. — The shutdown still prevails to a large extent, although it is evident it will not remain that way for any long period now as many of the leases require wells to hold them. Oil stocks are piling up, and if stocks continue to increase, it will mean the construction of additional storage and a cut in the price of crude.

Much of the work now going on is the hunt for natural gas. Only three completions were reported in Ohio County. All three were gas wells of average size. They are H. L. Ogle and others' No. 2 on the S. F. Whitley farm, in the Deanfield area, estimated at 300,000 feet; Wood Oil Co.'s No. 2 G. L. Barnett farm, around 250,000 feet, and James C. Ellis and others' No. 7 Jim Crowe farm, in the Coleman Pool, 750,000 feet.

Some of the new wells starting drilling in Ohio County are: Brenner & Adams' No. 3 A. F. Bellamy farm; Fuqua & Cooper's No. 1 W. F. Stephens farm; Wood Oil Co.'s No. 2 Burdette heirs' farm; Hall & Garrison's No. 1 S. E. Russell farm; Ohio Oil Co.'s No. 1 John Purcell farm; Cumberland Petroleum Co.'s No. 2 Alfred Brown farm; D. J. White and others' No. 1 Millard Reynolds farm, and Pointer and others' No. 1 Jesse Lyons farm, and No. 1 Henry Lyons farm.

Daviess County reports four completions, the best being the New Domain Oil & Gas Co.'s No. 5 well, 200 feet from the south line and 660 feet from the west line of the E. C. Ward 95 acres, in the Jones Pool, which showed an initial of 40 bbls. Eastern Gulf Oil Co.'s No. 7 well, 1,200 feet from the north line and 1,000 feet from the east line of the Ethel Chapman farm, in the Chapman Pool, produced an initial of 10 bbls. Hupp & Duff's No. 3, on the Martha Ann Sparks farm, in the vicinity of Cane Run and 600 feet from the south line and 200 feet from the west line of the lease, pumped 5 bbls. Young and Goldberg's No. 15, on the L. Purcell farm, offsetting the Atherton farm, in the Red Hill Pool, reported as dry. B. B. Rhodes and others are drilling a second test on the J. F. Bruner farm.

In Warren County, P. H. Lavelle's test, 800 feet from the south line and 600 feet from the west line of the W. S. Hurt farm, southwest of Bowling Green, developed a dry hole in the deep sand at 1,200 feet.

In the Pellville Field of Hancock County, D. T. Bolling's test, in the center of the Lewis Richards 100-acre farm, is reported with an initial production of 35 bbls. Armistead Oil Co.'s No. 1 H. C. Emerick farm, near the town of Cambridge, was dry in the Bethel sand at 801 feet. Cox, Ewell and others are drilling No. 1 on the Otis Bolling farm. H. C. Smith's No. 1 Virgil Crowe farm was dry in the Jett sand and going deeper for the Barlow sand.

In the Calhoun Field, McLean County, James C. Ellis and others' No. 1 Owen Salmon farm, near Glenville, reported at 10 bbls. from a depth of 1,406 feet. Same firm set a string of 1,500 feet of casing in No. 1 on the Henry Scott farm, same field. Same parties are drilling No. 1 O. Mayo farm.

In eastern Kentucky, Pike County, the United Carbon Co. found a nice gas well near the town of Cowpens, with a volume of 300,000 feet.

James C. Ellis and others are drilling a wildcat 4 miles northeast of Princeton, in Caldwell County.

W. K. White, of Hollywood, Calif., and an old-time operator in eastern Kentucky, has been spending some time looking over the Owensboro Field, where he has a son operating.

STEEL *under* the microscope

Burnished mirror-bright, etched in an acid-bath, a shiny square of steel is placed in the projector microscope in the metallography room at Crane laboratories.

To the layman, the texture disclosed is surprising as the filigree design of magnified snowflakes or the pattern of frost on the window pane.

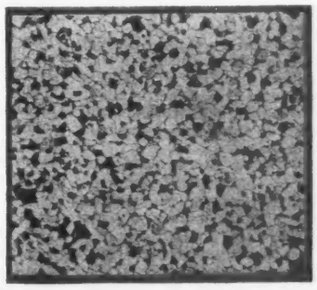
But to the scientist in metals who judges it with a master's eye, the surface tells a far wider story. It discloses coarse uneven or beautiful fine grains, tells of disproportions and proportions of constituents in the alloy, speaks volumes concerning malleability, ductility, hardness . . . gives a key to action of the metal in service, all based upon knowledge of the product.

Careful metallographic records of all metals used in Crane valves and fittings, painstaking microscopic examination of all new metals offered for possible use, are a part of the check and double check and triple check which is routine in Crane research and manufacturing. They are only one in a long chain of analyses, studies, and tests which give clear and exact knowledge of just how any Crane product will act under service stresses and strains.

At strategic points throughout the country, Crane Co. maintains specialists in valves and fittings to assist oil, piping, and consulting engineers. These men know valve capabilities as a trainer knows his thoroughbreds, as an aviator knows his plane. They are at your service.

1855
SEVENTY-FIFTH
ANNIVERSARY
1930

Here is an enlargement of the polished surface of a square of cast steel before annealing. Note the coarse uneven grain of the steel.



This enlargement of a square of Crane cast steel, after annealing, shows how the large grains have been broken up into fine even grains that eliminate internal strains and give the strength and ductility necessary under high pressure conditions. Every Crane steel casting is annealed, though some specifications do not require it.

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Natural Gas Industry Developments

MARYLAND RULING ON LINE TO WASHINGTON

BALTIMORE, Md., Sept. 15.—An out of State natural gas company can carry its pipe lines through Maryland without coming under the jurisdiction of the Public Service Commission, according to a ruling by former Senator William Cabell Bruce, general counsel to the commission.

Mr. Bruce also stated that the operators of natural gas lines need not secure permits from the State regulatory body to distribute gases to independent distributing companies for local service. He added that a corporation of this type has the authority of condemnation in securing rights of way through this State.

The transmission question was raised when the commission was informed that the Maryland Gas Transmission Co., a Delaware corporation, contemplates carrying its line from Pennsylvania to the District of Columbia through Harford, Baltimore, Howard and Montgomery Counties. The commission also was informed that a number of property owners have been approached by representatives of the corporation regarding rights of way.

In completing his opinion, Mr. Bruce advised members of the Public Service Commission to keep "hands off" in the case until such a time as this particular corporation shall begin distributing gas within the State.

Rumors have been current for several months that negotiations are under way between certain natural gas distributors and the Consolidated Gas, Electric Light & Power Co. for the sale, through the latter company, of these gases commercially within the city.

A number of survey parties representing themselves to be from different natural gas distributors have been making surveys from different points on the Pennsylvania State line to Baltimore.

According to the opinion of the general counsel, the Maryland Gas Transmission Co. has promised, in exchange for certain rights of way privileges, to distribute its gas service for domestic purposes to persons over whose properties the pipe lines are scheduled to pass. This distribution, the company stated, will be subject to the rules, regulations and rates approved by the Public Service Commission.

In his opinion, Mr. Bruce says in part:

"If the intent of the corporation is to construct a pipe line over the State of Maryland, but not itself to distribute gas from it to Maryland consumers, it is under no obligation, in my opinion, to apply to the commission for its permission and approval before beginning construction or exercising its franchise within the State of Maryland. In Bush vs. Maloy, 267 U. S., 317, it was held by the supreme court of the United States, reversing the decision of the court of appeals of Maryland in 143 Md., 570, that the Maryland statute prohibiting common carriers of merchandise or freight by motor vehicle from using public highways over specified routes without a permit, requiring the Public Service Commission to investigate the expediency of granting a permit when applied for, and authorizing it to refuse if it deems the granting of the permit prejudicial to the welfare and convenience of the public, was unconstitutional as applied to one desirous of using the highways as a common carrier in exclusively interstate commerce. See also Buck vs. Kuykendall, 267 U. S., 307.

"I cannot see why the conclusions reached by the supreme court of the United States in the case of Bush vs. Maloy should not be equally applicable to a gas pipe line used exclusively in interstate commerce, or to a telephone line that is a mere working appurtenance of such a gas pipe line. And it is also my opinion that if it is the intent of the Maryland Gas Transmission Corp. merely to deliver gas from its proposed pipe line, at one point or another within the State of Maryland, to a wholly independent distributing company, or companies, it is under no obligation to apply to the commission for its permission and approval before beginning construction or exercising its franchise within the State of Maryland. On this point the decision of the supreme court of the United States in Missouri vs. Kansas Gas Co., 265 U. S., 298, is conclusive."

UNION GAS CO. PURCHASE

CHATHAM, Ontario, Sept. 15.—The Union Natural Gas Co. of Chatham has acquired what is understood to be a controlling interest in the City Gas Co. of London, Ontario. The Union company at present supplies natural gas from the Tilbury and other fields of southwestern Ontario to Chatham, Sarnia, the border cities and practically all other communities in the three counties of Essex, Kent and Lambton. The City Gas Co. supplies artificial gas to the city of London, and practically all the stock has been held by a small number of shareholders in that city. For the present the City Gas Co. directorate will remain unchanged. The officers are: President, C. M. Duffield; vice president, W. L. Duffield; directors, A. M. Smart, Ronald Harris and John Pringle, all of London, and Dr. S. Cummings of Toronto. S. A. Morse, president and manager of the Union company, will probably become a director later. It is announced that there will be no change in either the policy or the product of the City Gas Co., and the management and officers will continue as heretofore.

The Union company, in view of the declining natural gas supply and increased demand in the border cities, last year constructed an auxiliary oil gas plant as a means of emergency supply for that area, and is contemplating the ultimate construction of a coke oven gas plant and the sale of mixed gas. In the earlier days of the Tilbury Field a project was mooted to pipe natural gas to London, but this was dropped. A project also to develop gas acreage in Elgin County and pipe production to London has been discussed at various times.

KANSAS CITY GAS WELLS

KANSAS CITY, Mo., Sept. 15.—Two more gas wells have been brought in in the Wyandotte County gas fields. One was on the Allbang lease and was drilled by a syndicate headed by Frank E. Messler. It has a production of 1,500,000 feet, which was reached in 26 feet of gas sand struck at 600 feet. The well is the twenty-seventh drilled by the syndicate, 22 of which are producers.

The American Pipe Line Co., a Doherty subsidiary, is building a pipe line to connect with the fields and has contracted for the purchase of the gas. It will be piped to Kansas City, Kans. Cost of the pipe line will be approximately $80,000. The pipe line will be completed within 60 days, it was said.

The second well is on a lease owned by the Quindaro Gas & Oil syndicate, headed by Henry J. Schaible, of Kansas City, Kans; C. C. Jackson and John Schaible. It has an estimated flow of 2,500,000 feet and was reached at 460 feet.

The discovery of a gas flow in the Quindaro section, 7 miles from the larger field, has caused a flurry among property owners.

Besides the gas found in the county, there is a field now furnishing gas to the city in the Fairfax district and another in the north part of Kansas City, Kans.

NATURAL GAS PAPERS FEATURE A.G.A. MEETING

A tentative program has been prepared for the meeting of the American Gas Association at Atlantic City, N. J., October 13-17. Natural gas will have a conspicuous part in the convention program. H. C. Cooper, of the Hope Natural Gas Co., Pittsburgh, Pa., in submitting the report of the main technical and research committee, is expected to outline a plan for work in natural gas conservation. The preliminary assembling of data by the United States Bureau of Mines, is now in progress. This step is in keeping with a resolution adopted at the convention of the natural gas department last May.

The natural gas department tentative program follows:

Monday Afternoon, October 13, 2 o'clock

Meeting Room C, Municipal Auditorium.

Opening remarks, H. C. Morris, chairman, Dallas Gas Co., Dallas, Tex.

Committee reports:

Main Technical and Research Committee, H. C. Cooper, Hope Natural Gas Co., Pittsburgh, Pa.

Natural Gas Convention Time and Place Committee, R. W. Gallagher, the East Ohio Gas Co., Cleveland, Ohio.

Natural Gas Fields, R. W. Hendee, vice president, Oklahoma Natural Gas Corp., Tulsa.

Long-Distance Transmission of Natural Gas, F. C. Brown, vice president, Continental Construction Co., Kansas City, Mo.

Pipe Line Leakage, J. A. Martin, superintendent of transmission, Lone Star Gas Co., Dallas, Tex.

Election of officers.

In the accounting session program, Tuesday afternoon, a paper will be read on "Some Natural Gas Accounting Problems," by F. B. Flahive, Columbia Gas & Electric Corp., New York City.

In the customer relations session Thursday afternoon, a paper will be read on the "Development of Customer Relations in the Natural Gas Field" by a representative of Southern California Gas Co.

The commercial section will be opened Tuesday afternoon with the address of Chairman George E. Whitwell, Equitable Gas Co., Pittsburgh, Pa.

Wednesday afternoon a paper will be read on "Developing Natural Gas Sales" by H. M. Crawford, general sales manager, Pacific Gas & Electric Co., San Francisco, Calif.

In Industrial gas section Thursday afternoon, the "Problems of Sales and Service Encountered in Change-Over from Manufactured to Natural Gas" will be discussed by J. H. Gumz, industrial gas engineer, Pacific Gas & Electric Co., San Francisco, Calif.

In the publicity and advertising section Tuesday afternoon, papers will be presented as follows:

"How Change-Over from Manufactured to Natural Gas has Affected Company Advertising and Publicity" by F. R. Jamison, Public Service Co. of Colorado, Denver, Colo.

"Advertising's Relation to Gas Sales Promotion" by Frank D. Schauer, Equitable Gas Co., Pittsburgh, Pa.

At the technical section program Tuesday afternoon, the following papers will be read:

"Substitution of Natural Gas for Manufactured Gas in Public Utility Operations" by George Wehrle, superintendent of gas department, Public Service Co. of Colorado, Denver, Colo.

"Report of subcommittee on Co-operation With the Oil Industry on the Utilization of Petroleum Products," by Joseph A. Perry, chairman, the United Gas Improvement Co., Philadelphia, Pa.

"Natural Gas Replaces Oil Gas in Pacific Gas & Electric Co." by W. S. Yard, Pacific Gas & Electric Co., San Francisco, Calif.

On Wednesday afternoon the section will hear a paper on "Economics of Long Distance Transmission of Gas," author to be announced.

On Thursday afternoon a paper on "Humidity Effects in the Iron Oxide Process for the Removal of Hydrogen Sulphide from Gas" by Prof. W. J. Huff and C. Gordon Milbourne, Johns Hopkins University, Baltimore, Md. and "Use of Bunker 'C' Oil in Water Gas Practice," by P. T. Dashiell, Philadelphia Gas Works, Philadelphia, Pa.

ALABAMA RATES LESS

MONTGOMERY, Ala., Sept. 15.—Natural gas rates at Montgomery and Selma have been established by the Alabama Public Service Commission. Montgomery and Selma will have natural gas this month, distribution to be made by the Alabama Utilities Service Co., a subsidiary of the Central Public Service Corp.

The new schedule calls for a general or domestic rate of $1.50 for the first 500 feet, 500 to 2,500 feet at $1.50 per 1,000 feet and 3,000 feet or over at 65 cents per 1,000 feet. The Montgomery rate was formerly $2 for the first 500 feet. It is pointed out by Central Public Service Corp. officials that customers gain an additional saving in that consumption of natural gas runs only about 60 per cent of manufactured gas.

GAS LINE TO SPOKANE?

CASPER, Wyo., Sept. 13.—Jerome Drumheiler, the operator who brought in the first gasser of the Cut Bank Field about two years ago, is promoting a gas line from the Cut Bank Field to Spokane, Wash. The proposed line will be 12 or 14-inch pipe and will pass through Kalispell, then to the Cour d'Alene district in Idaho and from that point to Wenatchee and Spokane. Mr. Drumheiler has asked the city of Kalispell for a franchise to serve natural gas to consumers in that place. The Kalispell council will vote on the matter at the coming meeting.

MO.-KANS. ADDS THREE CITIES

CHICAGO, Sept. 13.—Missouri-Kansas Pipe Line Co. has recently added three additional cities to its natural gas distributing system. Tell City, Ind.; Bowling Green, Ky.; and Whitesville, Ky., now are being served by the company. This makes 27 towns and cities in which Missouri-Kansas Pipe Line Co. is distributing natural gas from its pipe lines. There are 7 in Kentucky, 2 in Indiana, 1 in Illinois, 7 in Missouri, including Kansas City, and 10 in Kansas.

VICTORIA COUNTY GAS

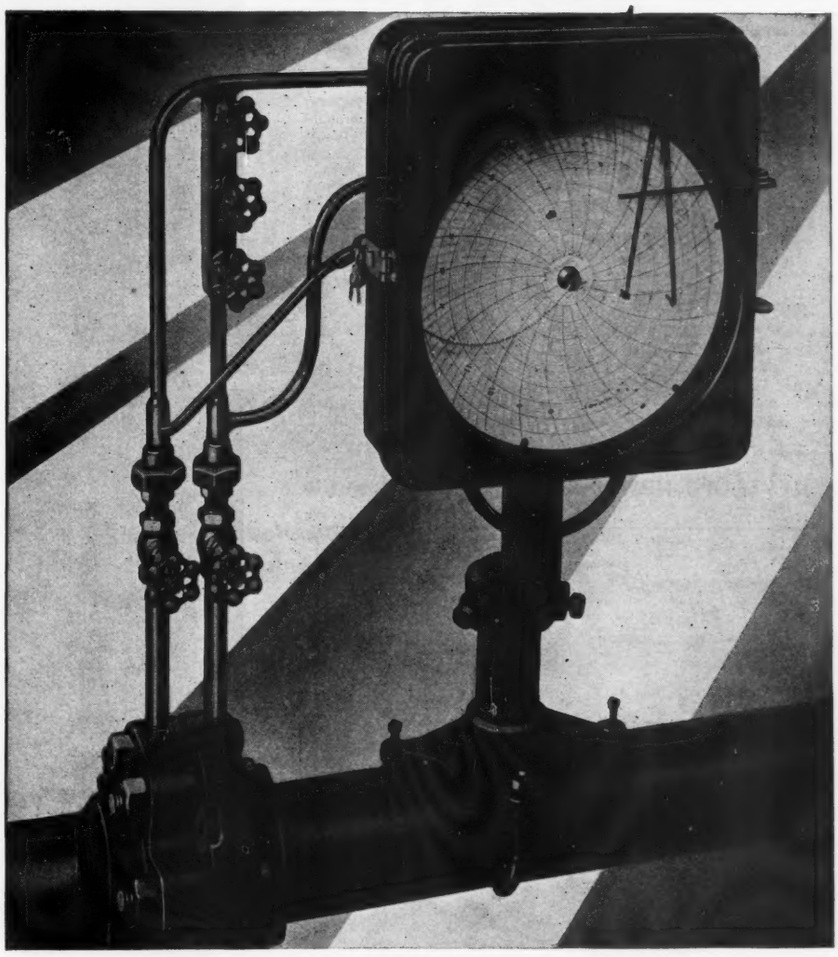
SHREVEPORT, La., Sept. 15.—Lion Oil Refining Co. of El Dorado, Ark., has contracted with the United Gas Co. to supply the latter with the entire output of its gas wells in Victoria County, Texas, United to build a tap from its main line which passes within 3 miles of the Lion's No. 1 McFadden.

MEDICINE HAT GAS WELL

CHATHAM, Ontario, Sept. 15.—The city of Medicine Hat, Alberta, will drill an additional well to supplement its natural gas supply. A loan of $15,000 at 6 per cent is being made for this purpose by the Medicine Hat Greenhouses, Ltd., one of the largest users of the city's utilities.

DIFFERENT

The EMCO ORIFICE METER



EMCO Orifice Meter

Simple, rugged construction.
Easy to clean and service.

Convertible between 20"—50"—100" ranges.
Simply change mercury chamber.

Dial differential calibrating and adjusting device.
Makes hairline adjustment easy.

Micrometer adjustment for calibrating static element and zeroing pen.

All parts of differential movement subject to corrosion are of stainless steel.

All-welded manifold.
Overcomes small leaks.

Built by the World's Largest Manufacturers of Gas, Water and Gasoline Meters and Gas Regulators

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EMCO METERS AND REGULATORS

Oil Field Equipment and Supplies

ALLSTEEL BACKFILLER FINISHES FIELD TESTS

The new Cardwell Allsteel Model 20 backfiller, announced by the Allsteel Products Manufacturing Co., Wichita, Kans., as having completed successful tests in the field, is designed for mounting on the Model 20 Caterpillar tractor.

The machine can be supplied for either one or two-man control. In either instance, all controls, including all positions of the boom are manipulated from the operator's seat.

All metal parts are of steel. The machine has Nikrome alloy shafts, Diamond roller chains and American heavy-duty roller bearings. Drum bearings operate in an oil bath and all other points requiring lubrication are fitted with alemite oilers.

The boom, of 3½-inch standard steel pipe of telescoping type, affording adjustments from 14 feet to 32 feet in length, may be operated 120° to either side, or up and down. It is mechanically controlled by boom-pole control drums from the operator's seat. The boom may be used on either the right or left side of the machine. The blade is electric welded and bolted of steel plate and angle construction, with crucible steel cutting blade; readily adjusted for satisfactory handling of soft dirt or heavy mud. Blades are supplied in three sizes. The in-haul drum has a speed of 175 feet per minute, and out-haul drum 350 feet per minute, controlled from the operator's seat through contracting band clutch.

On account of the fact that the boom pole can be operated in any position within a sector of 120° of arc, and can be held parallel to machine or in complete vertical position in transportation, this machine may be handled in pipe line work where the right of way runs through timber or where there are other obstructions.

This unit may be used as a portable hoist, for light ditching, and may be rigged to a tower to operate as a pile driver to handle a hammer weighing 1,000 or 1,200 pounds.

NEW REGAN CATALOG

Besides describing and illustrating oilfield equipment manufactured by the company the new catalog of the Regan Forge & Engineering Co., San Pedro, Calif., contains suggestions for adapting an old well to flange control equipment, the running of tubing while the well is under pressure, various methods of attaching flange and screw valves to the control equipment and a progressive set of illustrations showing the method of suspending casing, using control head equipment. The catalog consists of a bound volume of about 10 complete bulletins featuring crown-blocks of various types, 3, 4, 5 and 6-sheave traveling-blocks and combination string-ups of crown and traveling blocks. It also features Regan control equipment showing hook-ups for high pressures ranging to 6,000 pounds.

NOTES ABOUT TRADE LITERATURE

The September number of the Columbian Marketer, published by the Columbian Steel Tank Co., Kansas City, Mo., devotes much of its first page to a friendly invitation to producers, refiners and marketers to visit the company's exhibit at the International Petroleum Exposition.

Information and engineering data on American air filters as used in connection with compressors and engines are given in an 8-page bulletin prepared by the American Ail Filter Co., Inc., Louisville, Ky.

The Fusion News for September contains helpful articles on various phases of the process of welding. The periodical is published by the Fusion Welding Corp., Chicago.

Bulletin No. 141, which fully describes and illustrates Jenkins standard bronze valves with the one-piece screw-over bonnet and slip-on stay-on disc holder, has been announced by Jenkins Brothers, 80 White Street, New York.

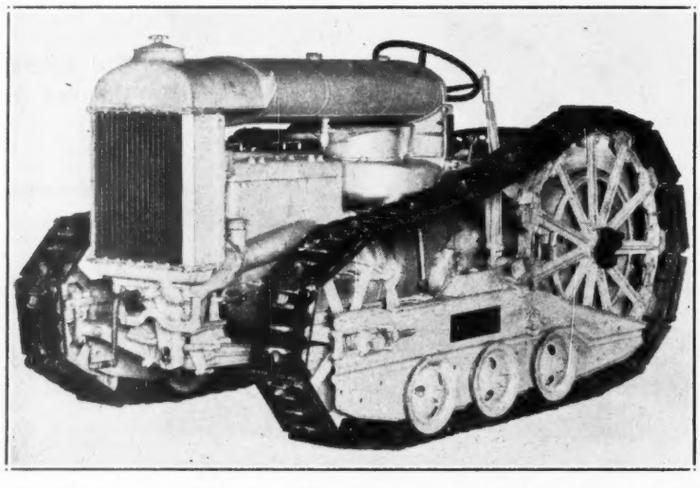
The Cooper-Bessemer Corp., Mount Vernon, Ohio, announces that the 24-page bulletin, "New Type-10 Compressor Unit," is ready for mailing. The bulletin gives information on the improved 100 brake horsepower single and 200 brake horsepower twin unit. A new compressor cylinder, a gas economizer and other field-proved features are shown and described, together with representative installations of this two-cycle gas engine compressor.

Only 1,000 uses of gas could be cataloged in 1913, but the regular uses to which gas is applied now number 23,000, notes the September "Piper," published by Joseph Greenspon's Sons Iron & Steel Co. At the beginning of 1930 the industry was serving 17,000,000 customers, an increase of 1,000,000 during 1929.

"Diesel Engine Lubrication," "Surface Adaptability," "Can the Lubrication Engineer Help You?" "Upsetting Old Ideas About Vibration Control," "Increasing Efficiency in Your Present Boiler Plant," "How Well Do Your Lubricants Lubricate?" and "Wage Incentive Plans" are articles of interest in the October number of "Black and White," published by the research staff of E. F. Houghton & Co., Philadelphia, Pa.

The B. F. Sturtevant Co., Hyde Park, Boston, Mass., is sending out a new bulletin on oil refinery equipment, including high-temperature recirculating fans, air preheaters, high-pressure propeller fans, oil economizers, turbines, engines, motors and mechanical and draft fans.

TRACKSON CO. DEVELOPS NEW SURE-FOOTED CRAWLER



The Trackson Co., Milwaukee, Wis., has developed a new Model F Trackson crawler for the new Fordson, which converts the latter into a powerful, all-steel, 2-ton crawler tractor. This unit has many advantages, such as sure footing and positive traction in severe ground conditions, additional weight for bearing down on hard pulls, increased power, shorter turning radius, and greater flexibility. Proper weight and balance and a track area of 1,100 square inches contact with the ground enable it to hug the ground and develop tremendous pulling power.

Especially important is the machine's ability to work well in soft, loose soil conditions, mud or sand, swamp land, snow, etc. Its light ground pressure, less per square inch than the pressure exerted by a man's footstep, enables it to travel lightly over soft surfaces, and its ground-gripping crawler tracks give it a firm foothold where the way is steep.

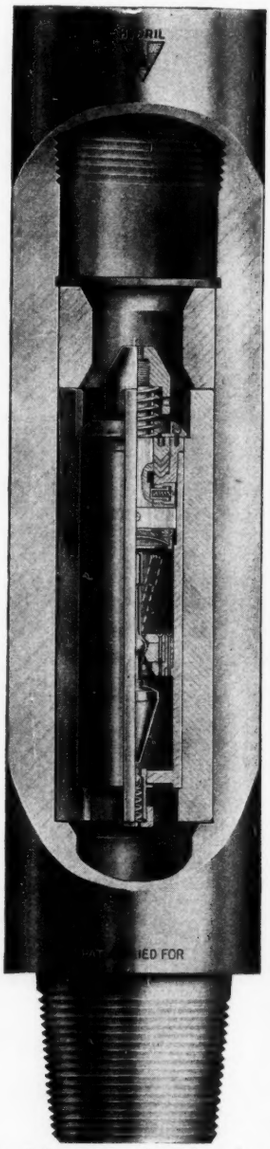
These Trackson crawlers are built entirely of steel and have few working parts. The tracks are made of heavy electric alloy steel castings, heat-treated and hardened to provide extra strength and resistance to wear. The sprockets are made of special alloy steel. Positive protection against sand and dust prolongs the life of all bearings and the patented truck wheel bearings which carry the entire weight of the tractor are provided with a special oil reservoir and are of ring-oiling design, making lubrication certain and easy.

Flexibility is an outstanding advantage. The unit retains the regular Fordson speeds and Fordson clearance. Oil field operators, contractors, industrial plants, etc., find it the right combination of weight, power, and sure-footed traction for service and economy.

SURVEYS HOLE WITHOUT INTERRUPTION OF DRILL

The Hydril angle indicator, made by the Doheny Stone Drill Co., Los Angeles, Calif., enables the crew to survey the hole while drilling because it is carried in a sub which becomes a part of the drill collar. It will take one reading for each run of the drill pipe either before drilling starts or just before coming out of the hole. The Hydril angle indicator is a scientific and accurate instrument.

The readings are taken on aluminum record discs, and they indicate the exact angle of the hole at the point where the reading was taken. These discs become a permanent record of the course of the well. Frank R. Seaver, general manager of the Doheny Stone Drill Co., says:



"The operator now has a quick scientific method to survey the hole while drilling without requiring a special run of the drill string. Drilling is not delayed. No mechanical calculation or auxiliary reading apparatus is necessary because the readings on the record discs are calibrated in degrees and the reading is direct."

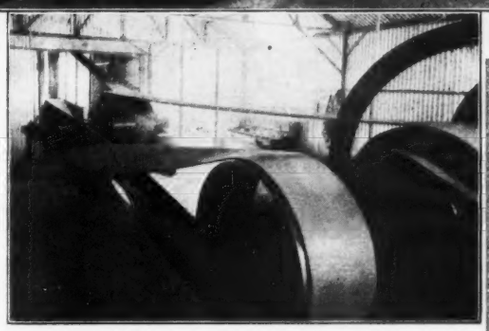
Mr. Seaver says the Hydril angle indicator is being sold outright to operators in all United States and foreign fields.

YOU GET THESE FEATURES

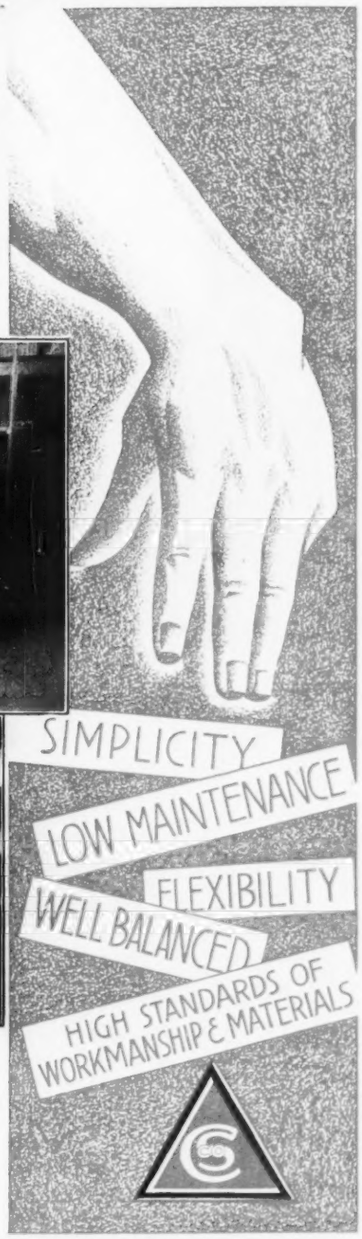
IN THE CONTINENTAL SUPPLY COMPANY TWO CYCLE GAS ENGINE

BUILT BY FAIRBANKS-MORSE

60 H. P. Continental Gas Engine



Continental Reverse Counter Shaft on beam well at Oklahoma City



"If Continental Sells It . . . . There Is No Better"

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THE CONTINENTAL SUPPLY CO., LTD.
224 Traders Building, Calgary, Alberta, Canada
Export Offices: CONTINENTAL EMSCO COMPANY, INC., 74 Trinity Pl., New York
London Offices: 316-17 Dashwood House, Old Broad St., E. C. 2
CONTINENTAL EMSCO S. A. R., 7, Strada Eminescu, Ploesti, Romania

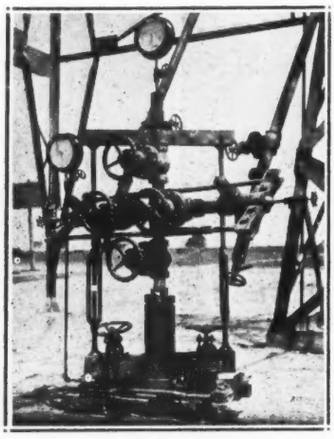
CONTINENTAL

Oil Field Equipment and Supplies

TUBING IN WELL WHILE FITTINGS ARE REPAIRED

The Brown safety tubing head, manufactured by the Gray Specialty Co., Houston, Tex., is designed primarily to enable the operator to close the master gate while the tubing or siphon pipe is in the well, so that any part of the Christmas tree or fittings can be changed and the well put back on production without having to kill the pressure with mud.

If indications of trouble are seen in anything above the master gate, such as



a sand cut-out in the manifold on the well or a leak of any kind, it requires only a moment to raise the stem or retractor tube to its upward position. It engages in a seat which cuts off pressure in the upper tubing valves. The fluid temporarily is run through the lower valves. When the stem or retractor tube is raised it separates at the master gate valve, leaving that valve free to be closed.

The tubing below the master gate valve is hung on a forged steel hanger in a special nipple which has openings to permit the flow of fluid or gas around the outside of the tubing through the lower casinghead valves.

This head allows quick repairing from sand cutting or blowing out of bad materials without stopping the normal flow of the well. It is made entirely of forged steel tested to 5,000 pounds pressure. The packing is of special design and composition, the result of the company's own experiments.

The illustration shows a Brown safety tubing head on one of the Pure Oil Co. wells in the Van Field.

C. F. BRAUN & CO. CONTRACTS

C. F. Braun & Co., makers of refinery equipment, have completed construction of an absorption plant for the Ohio Oil Co. in the Playa del Rey section of the Venice Field in California. The plant is designed to extract and stabilize 12,000 gallons of gasoline daily from 5,000,000 feet of gas. This is the first plant in the field. The Del Rey Oil & Refining Co., Ltd., operating in the Venice Field, has contracted with the Braun company for construction of an absorption plant to treat 10,000,000 feet of gas per day.

In Texas, C. F. Braun & Co. are about to complete construction of an absorption plant for the Signal Oil Co. at Best Field. This plant will treat 35,000,000 feet of natural gas and yield 27,000 gallons of gasoline daily. Another plant under construction by Braun is at the holdings of the Big Lake Oil Co. at Texon, Texas. This plant will have a daily capacity of 50,000,000 feet of gas.

NEW PORTABLE ROTARY DRILLING MACHINE ANNOUNCED

The Star Drilling Machine Co., of Akron, Ohio, has announced the perfection of its new No. 60 Star portable rotary drilling machine for shallow oil well drilling and structure testing.

Star 60 can be used with either rotary or shot drill method. This permits drilling soft formations with rotary tools and when hard formations are encountered coring them with a shot core barrel. Having these two methods of drilling reduces drilling costs.

The engine, drawworks, pump and rotary table are assembled on the same frame as the No. 60 machine. The mast is of the hinged type, for moving on machine, and is raised by engine power. Mud line is built into the mast, so that when the mast is raised it is only necessary to make one union connection from the base of the mast to the mud line from pump, and circulation is ready. One engine serves for driving the rotary table, drawworks and mud pump, as well as moving the machine.

The No. 60 Star is recommended for rotary drilling up to 1,500 feet depending on the size of hole and size of drill pipe used.

AMONG THE EQUIPMENT HOUSES

The Union Machine Co., Bartlesville, Okla., manufacturers of Durnell bandwheel powers, geared pumping powers, pumping jacks and surface equipment, has appointed the Continental Supply Co. as Mid-Continent representative.

The Foster Wheeler Corp., New York, which supplies equipment for power stations, oil refineries and natural gasoline absorption plants, with branch offices throughout the country, has opened a branch in Tulsa, in charge of C. C. Steward.

A. F. Kennedy, formerly Dallas manager of the Leland Equipment Co., has been appointed direct sales representative for the Columbian Steel Tank Co., Kansas City, Mo. Servicing shops and warehouses will be maintained at 1916 Canton Street in Dallas with Mr. Kennedy in charge.

The Midwest Equitable Meter Co., a division of the Pittsburgh Equitable Meter Co., has constructed a modern building on the Sand Springs Road, Tulsa, with A. J. Kerr in charge as district manager. The service rooms are equipped with gas and water provers, gauges, etc., for testing, repairing or rebuilding meters and pressure-regulating equipment.

W. C. Trout, vice president and general manager of the Lufkin Foundry & Machine Co., Lufkin, Texas, is in California calling on the various oil companies using Lufkin equipment and incidently renewing acquaintance with the 6-months-old daughter of his son, Edward Trout, who looks after the business of the institution on the west coast.

H. W. Ealy has been appointed general manager of the Clark Machine Co., Wichita Falls, Tex., manufacturer of the Wichita Falls spudders and other oil field machinery. Mr. Ealy was formerly in the sales department, where he is succeeded by Fred B. Sharp.

K. W. Davis, recently elected president of the Mid-Continent Supply Co., has moved from Houston to Fort Worth, Texas, where the headquarters of the company are located. D. H. Thornburg, chosen vice president at the same time, has succeeded Mr. Davis as manager of the Houston office.

DOHENY BRANCH PLANT IS OPENED IN HOUSTON

The initial unit of a branch factory of the Doheny Stone Drill Co. of Los Angeles, Calif., has been opened in Houston, Tex., Frank R. Seaver, general manager, announces. The branch is in a large warehouse which has been remodeled and which when equipped and in oper-

Frank R. Seaver

ation will be the largest of the Doheny branches.

Entrance into the Mid-Continent area by the Los Angeles firm was brought about by the increasing demand for Doheny products throughout Texas, Oklahoma and Louisiana oil fields. Branches have been in operation for some time in Oklahoma City and Hobbs, N. Mex. The parent factory occupies 40 acres in Torrance, Calif. The principal product is the Hydril oil well drilling equipment.

MEDART MAKING V BELTS

The Medart Co., St. Louis, Mo., which for a half century has specialized in power-transmission machinery, including important rope drive installations, has entered the V belt drive field. In its announcement of this departune the company points out various advantages of the V belt principle and says: "Medart V belts are impervious to moisture, grease or dirt and resist their destructive action. As neither idlers nor belt weights are required for their tension or grip there is a resulting minimum load on bearings. Used in multiple, a unit belt when broken does not stop the operation of the machine, but can be replaced at convenience without an emergency stop."

BAASH-ROSS PLANT ENLARGED

Upon the return of Dick Clark, vice president and sales manager, and Edwin Burns, assistant general manager, from a two weeks' trip to the Texas and Oklahoma Fields, the Baash-Ross Tool Co. announces plans to enlarge its Oklahoma City plant 50 per cent. New drilling machinery has been installed, and the shop has facilities for drilling collars and stems up to 51 feet in length. Other equipment has been added. This plant, which maintains a regular stock of Baash-Ross tools and parts and does general machine work and manufacturing, is under the direction of George Dewney.

Only six men?

TRACKSON
McCORMICK-DEERING

THAT'S all. Six men. Doing a job that used to require many more—and doing it faster and cheaper. Funny what a few short years will do to methods and costs—and results. Yesterday men did practically all the work. Today they do only those parts of the work that can't be done quicker and better with the combination shown above—a Trackson McCormick-Deering Crawler Tractor and WKM boom. Letting men do what this outfit can do cheaper would make them pretty high priced labor.

Part of a fleet of 25 units recently purchased by the Gulf Pipe Line Company.

Trackson Company
CRAWLERS AND TRACTOR EQUIPMENT
1321 SO. FIRST ST. MILWAUKEE, WIS.

IDEAL

IDEAL

TRAVELING BLOCK

76 INCH TYPE C

42-INCH DIAMETER SHEAVES
WITH A.P.I. GROUND GROOVES
⁘ ROLLER BEARINGS ⁘ 8¾-INCH
CENTER PIN ⁘ BUILT-IN GUARD
⁘ ALL STEEL CONSTRUCTION ⁘
9000 POUNDS WEIGHT. . . . .

Descriptive Bulletin
No. 92
Sent on Request

THE
NATIONAL SUPPLY
COMPANIES

Technical Questions Answered

BY CHARLES K. FRANCIS, PH.D., TECHNICAL EDITOR

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with the marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible so as to assure a satisfactory answer.

All inquiries should be signed and if other than the given initials are to be used please indicate the desired letters.

Questions involving patented processes, intricate formulas and calculations and estimates of costs, for obvious reasons, cannot be answered. The replies will appear on this page within a reasonable time.

HYDROGENATION AND LUBRICATING OIL

Referring to your August 7 issue, as a reply to R. M. under Chemistry and the Petroleum Industry, you state that "The recently announced hydrogenation process is a chemical one that promises to alter the entire refining operation, especially for the manufacture of lub oils." Articles that I have read have stressed the increased gasoline yield obtainable. Will you kindly amplify your statement as to how this process will affect the manufacture of lubricating oils?—R. D. R.

The larger part of our knowledge of the hydrogenation process has been based on the work done with coal. It is clear that when the process is applied to suitable petroleum fractions, that complications introduced through the inherent impurities of coal need not be expected. When similar products are obtained they should be of a higher quality. The usual distillation is accompanied by cracking and the formation of unsaturated substances that are not wanted in a high grade lubricating oil; hydrogenation should do away with this tendency and consequently produce a superior product.

A. W. Nash has discussed the Hydrogenation of Coal in The Fuel Economy Review, July, 1929, and Synthetic Fuels, Journal of the Institution of Petroleum Technologists, Vol. 16, 313; 1930. The statements following are based on this authority.

High grade lubricating oils should possess, besides purity and friction reducing qualities, the following:

The property of forming stable films on metallic surfaces; resistance to oxidation, for example when blown with air at elevated temperature; stability to heat; in certain cases good demulsibility characteristics when emulsified with hot water; and low carbon deposits on rapid distillation.

Spilker has found that oils possessing the viscosity and stability necessary for lubricants were formed by the hydrogenation, under Bergius conditions, of high boiling fractions of coal tar.

Several patents mention the prevention of coke formation by hydrogenation and the formation of a lubricating oil having an extremely low carbon residue is suggested.

Sulphur is eliminated by hydrogenating in the presence of water and a catalyst. The process appears suitable for the formation of an oil free from wax and consequently of very low pourpoint. The oil should be of light color.

Since these properties have been found in the oil from coal, it seems safe to predict that the hydrogenated product from petroleum will be a lubricating oil of exceptional quality.

LIME FOR CORROSION AND REFINING

We would like to know something about the merits of lime in refining? Is it a treating agent, like caustic, or simply to stop corrosion? Is it advisable to introduce lime into a crude still or a cracking still? Any information as to what kind of lime is best and the amounts that should be used will be appreciated.—C. H. L.

Lime is used for the pretreatment of crude, for treating gas, and in cracking stills. The common form is the hydrated lime. This form is received in convenient packages and being so finely divided is easily distributed throughout the oil. It is obtainable in a high state of purity, free from stones and other inert material.

The alkaline character of lime permits its use for the purpose of neutralizing any acid that may be present in crude oil, either as a pretreating operation or during the actual distillation of the oil. It will unite with some forms of sulphur and the combination of reducing acidity and sulphur will tend to minimize corrosion. It is claimed that some crudes containing large quantities of sulphur are very much improved by the introduction of hydrated lime to the oil while it is in storage.

Lime is not the same kind of a reagent as caustic soda. Compounds of similar nature may be formed in some cases but lime is not so soluble and remains in suspension while passing through the system.

It is usually not economical to add enough lime to prevent all corrosion, but reasonable quantities have been found to be worth while because the method has been found to result in a material reduction of the corrosion to the distilling units. While comparatively large quantities have been used for exceptional oil, the common practice is to add something between one-half and one pound to the barrel. High velocities are desirable, so the tube still is adapted to an oil carrying lime in suspension.

The lime is suspended in the oil by means of mechanical agitation in a part of the charging stock, then this is forced into the main charge by means of direct action pumps after the oil has passed through the charging pump.

Some comments by Whitman and Roberts, Pressure Still Corrosion Problems, The Oil and Gas Journal, December 5, 1929, Page 94, are made on the use of lime. Data are presented illustrating excellent success in reducing corrosion by the addition of lime to the charging stock for pressure stills. "In this case the total sulphur content was 0.25 per cent, and approximately 1 pound of hydrated lime was added per 100 gallons of cold feed. The corrosion in various parts of the equipment was reduced by from 80 per cent to 97 per cent. The initial high corrosion rate, as indicated in the vapor space of the stills, was decreased from 0.192 inch per year to 0.0217 inch per year. The reduction in corrosion is paralleled by the lowered content of hydrogen sulphide in the gas from the stills. Before lime was used, the dry gas contained 150 grains hydrogen sulphide per 100 cubic feet. Immediately after the lime was started, this dropped to 20 grains.

"Reports from various companies which have used lime show that concentrations from 0.1 to as high as 10 pounds per barrel have been employed on a plant scale. In general, however, the average amount used is in the neighborhood of 1 to 2 pounds of the hydrated lime per 100 gallons of cold feed.

"The ultimate disposition of the lime fed to a Holmes-Manley unit is about one-third in the coke and two-thirds in the tar. Evidently the presence of so much lime in the tar may make it unsalable for certain purposes thus introducing the problem of removing it by filtration or other means.

"Caustic soda instead of lime may have some advantages, but appears to cause the formation of a very dense coke difficult to remove and introduces the hazard of caustic embrittlement of the steel."

PROPERTIES THAT SHOW VALUE OF CRUDE OIL

What is considered the more important for determining the market value of a new crude oil, the gasoline content or the percentage of lubricating oil that it will yield?—J. A. D.

The present price table for petroleum is based on gravity, the highest prices being paid for the lighter oils. There is an exception to this for the relatively small quantity of crude oil produced in the eastern district, which is valued for the quality of the lubricating oil that it contains. The greatest return to the general refiner is the quantity of gasoline that may be made, and the lighter oils, as a rule, yield the highest percentage of gasoline.

A few years ago some of the heavier crude oils were not refined, so the producer was forced to sell such oil to be used for fuel or road oil. But with the perfection of refining equipment it is now possible to convert a large part of these heavy oils into gasoline. Formerly there were numerous plants making a practice of topping the crude oil for gasoline and kerosene without attempting to do any cracking; such plants desired the lighter crudes and frequently were willing to pay a special price for high gravity oil. So great has been the growth of the cracking process, with the consequent increased yield of gasoline, that the percentage of straightrun gasoline possible to obtain from a given crude has decreased in importance.

Transportation expense and the location of refining centers with respect to market have much to do with the value of crude oil; that is, the price it will bring. Of course the composition of each product that is derived from petroleum is influenced by the type or source of the petroleum. The refiner has, as above suggested, perfected methods of separation and purification to such a degree that the grade of the crude oil has little to do with the gasoline yield and the quality of the product. It is a matter of refining skill and suitable modification of the product by chemical treatment or the addition of other materials.

Much progress has been made within the last few years in the manufacture of lubricating oils. Vacuum distillation, exact control of the chemical treatment and the special processes for the removal of wax have contributed to the improved quality of lubricating oils from all grades of crude oil. The development of the hydrogenation process will be watched with special interest to see just how it will influence gasoline manufacture and the manufacture of lubricating oil. It is reported that the grade of the oil has little to do with yield and quality of both products by this process.

GLOSSARY AND TECHNICAL INFORMATION

I will appreciate it if you will kindly advise me where I can secure a handbook or other treatise containing technical information concerning—Endpoint, Specific gravity, Cracking, and other terms used in connection with gasoline. Also technical terms used in connection with gas oil; such as U.G.I., Overhead, Uncracked, Cold test, etc.?—J. E. R.

Glossaries of petroleum terms may be found in—Bacon and Hamor, The American Petroleum Industry, Vol. 2, page 845. D. T. Day, Handbook of the Petroleum Industry, Vol. 2, page 854. Information relating to methods for the determination of endpoint, and other properties may be found in publications of the American Society for Testing Materials; the various reports of Committee D-2, especially The Significance of Tests of Petroleum Products. The address of the American Society for Testing Materials is Philadelphia, Pa.

Endpoint is the final boiling point, or maximum temperature, obtained in a distillation test.

Specific gravity is the density at 60° F. The density of all liquids is that compared with water. The density of petroleum liquids is obtained by means of the hydrometer graduated in A.P.I. (American Petroleum Institute) degrees.

Cracking usually refers to the manufacture of gasoline from a heavier product by means of a pressure still. The longer chain of hydrocarbons is broken, that is "cracked," into a shorter chain.

U.G.I., in gas work, gas oil methods, etc., represents the United Gas Improvement Co.

Overhead is that part of a product obtained as a distillate. The vapors taken from the top of the still are conducted through a cooling medium and condensed.

Uncracked means the opposite of cracked.

Cold test is the temperature at which the product becomes solid. It will not flow at this temperature.

COAL TAR PRIMER AND NOXIOUS ODORS

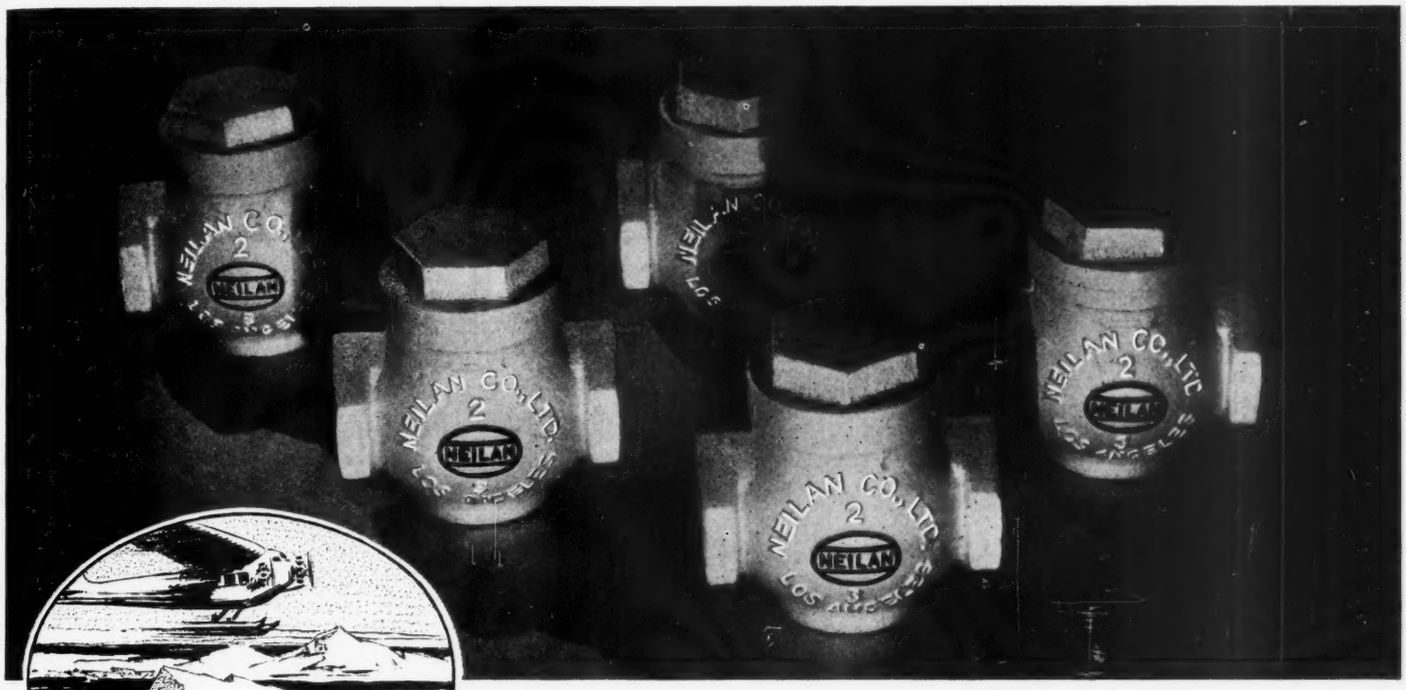
We are confronted with the problem of eliminating noxious odors from a coal tar primer. The plant using this primer is located in a residential district where the housewives complain of a "gas house odor," no doubt due to the coal tar naphtha in the primer. Complaint is made of headaches and nausea induced by this odor. Could you suggest any method for handling this situation?—M. O. J.

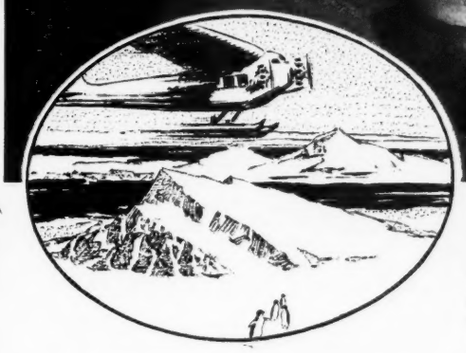
If the odor is due to the primer it would seem advisable to obtain some other product for the purpose. A refining process, similar to that used for the treatment of petroleum distillates should give a product free from objectionable substances. This treatment may include washing with caustic soda and a separate treatment with sulphuric acid.

The hydrocarbons of the benzol series, derivatives of coal tar, are in many instances of a poisonous character; the hydrocarbons of the paraffin series, such as those present in the lighter fractions from petroleum, are quite harmless. Poisoning may follow the inhalation of the vapors given off when coal tar, as used for roofing, is heated. These vapors are always the more volatile portions.

The crude naphtha, or light oil, from coal tar is composed of a number of different substances; among the principal constituents are benzol, xylol, toluol, pyridine and thiopene. These are sufficiently volatile to be carried away in the vapors and to cause poisoning when inhaled. Children and women are more liable to be affected by this form of poisoning than men.

NEILAN Check Valves Never Wear Out





Admiral Byrd's Sun Compass

Much of the success of Admiral Byrd's flights over the frozen Antarctic wastelands was due to his accurate sun compass. Its reliability in unfailingly keeping him on his course was due to its precision in design and workmanship. Reliability is also an outstanding feature in NEILAN equipment in which precision in design and workmanship warrant long, trouble-free performance.

SHEER honesty on our part prompts us to state that we cannot make quite so strong a claim for even the new Neilan Chrome-Alloy Cast Steel Valve body with full Nirosta KA2 Stainless Steel working parts. We can say, however, that this check valve will outlast and outwear valves made of ordinary materials several times over, especially in corrosive service.

Neilan engineers developed this improved valve to withstand the destructive corrosive sulphur gases so frequently encountered in the oil and gas industry. Its smooth working stainless steel piston acts as a cushion whether the valve opens or closes. This also prevents chattering and makes the valve noiseless.

You will recognize the superior performance of these Neilan Double Cushioned Noiseless Check Valves (No. 521) when used with gas or air compressor in gas lift or repressuring service. Ask your nearest Neilan Engineer about these non-corrosive check valves or write for the illustrated Bulletin No. 521-B.

NEILAN CO., Ltd.

(Formerly Neilan, Schumacher & Co.)

641-651 Santa Fe Avenue . . . . Los Angeles

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SAN FRANCISCO, 16 Avila Road . . . Wm. S. Waldrip, Mgr.
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HOUSTON, 1400 Conti St., Maintenance Engineering Co.
General Mid-Continent Engineer . Roy O. Campbell

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OUR EXHIBIT
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OIL SHOW
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Oklahoma Building

"YOU CAN BE SURE OF NEILAN PRODUCTS"

Personal Paragraphs About Oil Men

Dr. Ed. Bloesch, consulting geologist of Tulsa, is leaving this week for a month's professional work in old Mexico.

* * *

C. R. Harrison, secretary of the Louisiana Oil Refining Corporation at Shreveport, La., made a business trip to Houston, Tex., recently.

* * *

John A. Stumpf, in charge of the light oil sales with the Henry H. Cross Company, Chicago, is taking a vacation in the North Woods.

* * *

Ralph H. Kinsloe, of the Magnolia Petroleum Company, Dallas, Tex., spent a pleasant vacation near Cowles, N. Mex. Fishing was his main occupation during the trip.

* * *

Capt. J. F. Lucey, Dallas, Tex., has returned from a trip to Tennessee and Washington, D. C. While at the latter place he visited his old friend, President Herbert Hoover.

* * *

John Franklin Dodge, professor of petroleum engineering at University of Southern California, has returned to Los Angeles from Honolulu following an absence of several weeks.

* * *

Count Armand Gregoire, of Paris, France, representing French financial interests, recently visited Calgary en route to inspect the Turner Valley Field and the Ghost River structure.

* * *

William S. Hart, special representative of the Hazard Wire Rope Company, Wilkes-Barre, Pa., has returned to his headquarters after a three months' stay in the Southwest territory.

* * *

L. B. Rowsey, general manager of the Smith Separator Company, Tulsa, has just completed a business trip to the company's office at Fort Worth, Tex., and a trip to Hobbs, N. Mex.

* * *

Tom Cranfill, independent operator, Dallas, Tex., president of the Texas Division of the Independent Petroleum Association, has just returned from several weeks' vacation in California.

* * *

W. F. Brigance, who has been the Frick-Reid Supply Corporation representative at Fort Worth, Tex., for the past few years, has been transferred to the credit department of the company at Tulsa.

* * *

W. J. Sherman, chief clerk in the production department of The Texas Company, Houston, Tex., has gone to Los Angeles, Calif., for a short pleasure trip. He and his wife, who have been visiting in California, will return by automobile.

* * *

I. H. Lantz, superintendent of the Simms Oil Company's refinery at Smackover, Ark., for the past two years, has been transferred to Dallas, Tex., headquarters and is succeeded by R. C. Burns, formerly assistant superintendent at Smackover.

* * *

John G. Grego, of the Phillips Petroleum Company, Bartlesville, Okla., has been spending some time in the Independent Oil & Gas Company office at Fort Worth, and in West Texas, at San Angelo with Gilbert Wood, head of the Fort Worth office of the company.

* * *

R. D. Beardsley and Mrs. Beardsley, the former of whom is treasurer of the Standard Oil group of natural gas companies with headquarters in Pittsburgh, have returned to their home in that city after a month spent in the Rocky Mountain region. They passed two weeks in Colorado Springs and five days in Yellowstone Park.

* * *

Robert L. Kidd, for the past year resident geologist in Kansas for the Empire Oil & Refining Company, has been promoted and will join the Cities Service Gas Company. Mr. Kidd has been connected with the Empire company's geological department in Kansas for the past four years. He will be succeeded by George F. Berry, an assistant.

Fred Hyer, independent operator, Fort Worth, Tex., has just returned from Chicago.

* * *

Joseph E. Morero, district geologist for the Skelly Oil Company, San Angelo, Tex., spent his vacation in San Pedro, Calif.

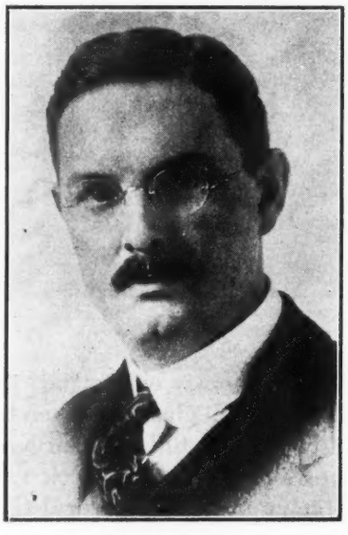
* * *

Adrian Moore, vice president and general manager of Rycade Oil Corporation, accompanied by his family, motored to New Orleans, La., and return for a short pleasure trip.

* * *

Gurney E. Newlin, a director of the Union Oil Company of California and holding a similar position in a number of other substantial enterprises, has been elected to the directorate of the Security First National Bank, of Los Angeles, Calif.

Men in the Industry



John A. Brown

John A. Brown, president of the General Petroleum Corporation of California, was formerly a production executive of the Standard Oil Company (New Jersey). For 10 years he was one of the key men in the New Jersey company's foreign staff and he left that service in 1928 to go to California for the Standard Oil Company of New York, owner of the General Petroleum properties.

Mr. Brown's record in Mexico and the Dutch East Indies attracted the attention of the New York company and he was induced to join the staff of the General Petroleum Corporation as vice president in charge of production. This was followed by elevation to the presidency as successor to Lionel Barneson, who resigned. Mr. Brown was born and reared near the old Pennsylvania oil fields and his first job was in the accountant's office of an oil company. He was promoted to the land department and then into production, in which he has spent most of his time in the last 10 years. In Mexico, Mr. Brown was in charge of production for the Standard Oil Co. of New Jersey when this company was one of the largest three operators there.

The company that Mr. Brown heads is one of the larger producers in the leading California fields, particularly in Santa Fe Springs, where it has extensive holdings. At Kettleman Hills, General Petroleum ranks as one of the largest potential producers from its 2,929 acres on the north dome, part of which has been proven by its No. 2 Ochsner, recently placed on production, and by wells of other companies. The value of the General Petroleum reserves at Kettleman Hills have been independently estimated at $250,000,000.

George H. Currie, independent operator of Tulsa, has been spending some time in Fort Worth, Tex., on business.

* * *

F. F. Fuller, of the Atlantic Oil Producing Company's legal department at Dallas, Tex., was in the Shreveport, La., territory recently.

* * *

J. H. Ogden, of the Prairie Oil & Gas Company, Breckenridge, Tex., has just returned from a vacation trip to his home in New York State.

* * *

Charles Bradley, scout for The Texas Company, has moved his headquarters from Colorado, Tex., where he has lived for the past several years, to San Angelo, Tex.

* * *

Norman E. DeRousse, formerly representative of the Oil Well Supply Company in Alberta, has joined the staff of the McJunkin Supply Company of Charleston, W. Va.

* * *

B. E. Thompson, assistant division geologist of the Gulf Production Company, Fort Worth, Tex., has just returned from a vacation spent in New York and New Jersey.

* * *

Robert J. Pritchard, president of the Southern California chapter of the National Aeronautic Association, with offices in Los Angeles, has been elected first vice president of the national organization.

* * *

George H. Parsons, representing the California Talc Company, Los Angeles, Calif., is spending a short time at Houston, Tex., and in the Gulf Coast territory. From Houston he will go to the exposition at Tulsa and thence to New York.

* * *

R. N. McBride, production engineer of the Union Oil Company at Santa Fe Springs, Calif., and prior to that superintendent of production at Dominguez, has been transferred to Taft as superintendent of production for all fields in the San Joaquin Basin.

* * *

W. T. Dinkins, vice president and general manager of the Southwest division of the Sinclair Oil & Refining Company, of St. Louis, Mo., was a business visitor to Fort Worth, Tex., last week. Mr. Dinkins will be located in Fort Worth after October 1.

* * *

D. O. Bayliss, head of the land department of The Texas Company, Fort Worth, Tex., is being transferred to the Houston office of the company, and, T. T. Freeman of the Denver, Colo., office has moved to Fort Worth to take charge of the land department at that place.

* * *

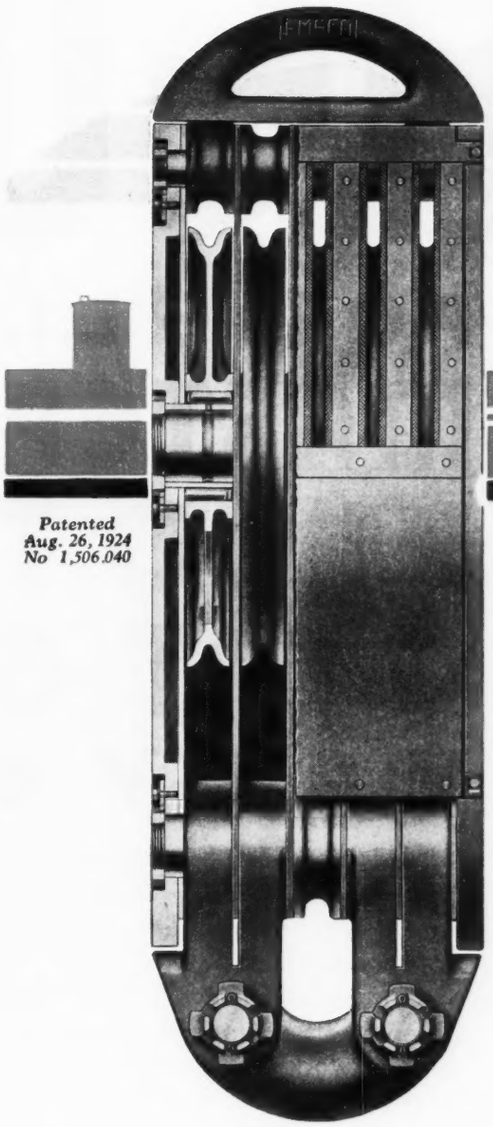
C. M. Fuller, president of Richfield Oil Company of California, accompanied by his family and several executives of the company, flew from Los Angeles to Chicago for the National Air Races and thence to New York for a visit to the offices of Richfield Oil Corporation of New York, eastern marketing subsidiary.

* * *

H. B. Hill of the United States Bureau of Mines and W. P. Laughter, oil and gas supervisor for Southwest Texas, have returned from an extended tour of the coast country of Texas, Refugio Field and the Beaumont district. Mr. Hill, whose office is in Dallas, Tex., has been taking deep sand cores from the various wells to send to the United States bureau at Bartlesville, Okla., for analysis.

* * *

C. W. Sternberg, for several years superintendent of construction with the United Gas interests of Houston, Tex., has resigned. He has become associated with Seybold & Mitchell, pipe line contractors, and is opening headquarters at Rock Island, Ill., and will build the gasoline pipe line crossing the Mississippi River into Chicago. Seybold & Mitchell are building this section of the line for the Great Lakes Pipe Line Company of Ponca City, Okla.



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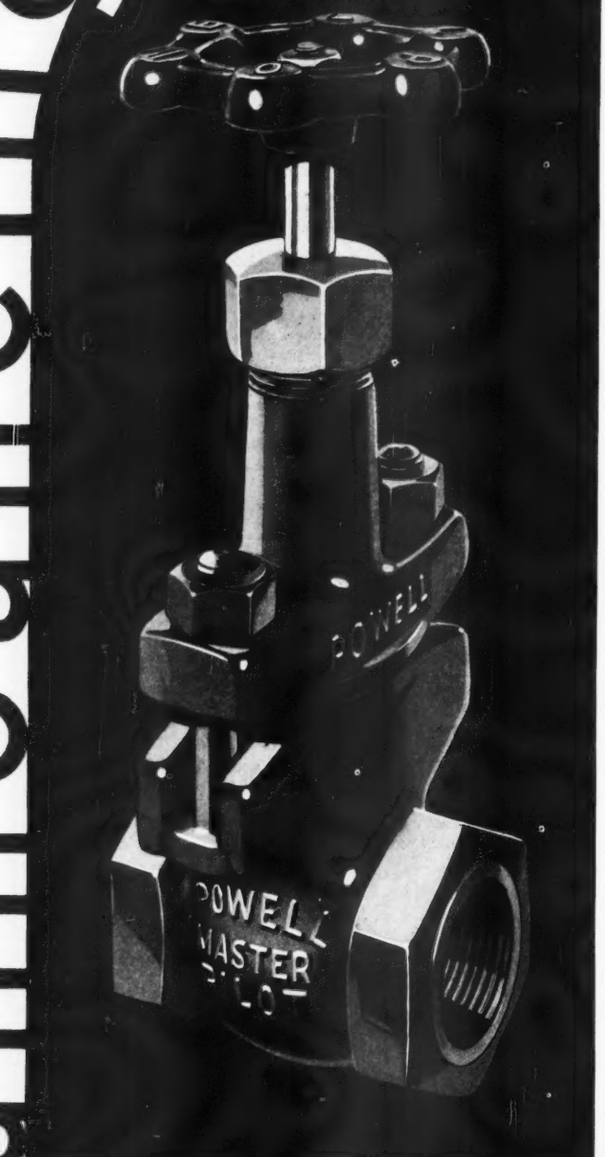

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WILDCAT OPERATIONS IN LOUISIANA-ARKANSAS

(Continued from Page 54)

CALDWELL PARISH

Hudson et al's No. 1 Burton, Sec. 35-12-2e.....S.D. wtr. 710 ft.

CATAHOULA PARISH

La. G. & F. Co.'s No. 1 Tensas Delta Land Co., 660 ft. N, 1,318 ft. E, SW cor., Sec. 23-6-5.....Cmtd. 9-in. 865 ft; drlg. 2,016 ft.

CLAIBORNE PARISH

Baird Bros. et al's No. 1 Whittaker, 600 ft. N, 400 ft. W, SE cor. NE, Sec. 30-20-7.....Drlg. 1,700 ft.

Baugh et al's No. 1 Alexander, 330 ft. S, 330 ft. W, NE cor., Sec. 27-20-8.....Rig up.

El Dorado Chief Oil Co.'s No. 1 Dance, C SW NE, Sec. 27-20-7.....S.D. 2,240 ft.

Triangle Drlg. Co.'s No. 1 Hodges et al, 660 ft. S, 660 ft. E, NW cor. NW SW, Sec. 6-19-5.....Drlg. anhydrite 4,196 ft.

CONCORDIA PARISH

A. C. Glassell's No. 1 Britton & Koontz, 6,000 ft. S, 25 2t. E, NW cor. irregular Sec. 20-8-10.....Location.

A. C. Glassell's No. 1 Pecania Plantation, 25 ft. S, 25 ft. W, SE cor. irregular Sec. 44-8-9.....Location.

A. C. Glassell's No. 1 Pittsfield Plantation, N 9°, E 1,320 ft., SW cor., Sec. 41-8-10.....Blew out between 1,392-1,450 ft; estimated 1,000,000 ft. gas; bridged; recmtd. 8¼-in. 1,370 ft; 6-in. 1,440 ft; estimated 5,000,000 ft. gas; bridged; T.D. 1,453 ft.

Joe Marr et al's No. 1 Maxwell, C. Sec. 35-3n-8e.....8-in. stuck at 1,300 ft; T.D. 2,820 ft.

DE SOTO PARISH

Joe Burnham et al's No. 1 Mary Hood, 320 ft. W, 201 ft. S, NE cor. SE SE NE, Sec. 3-11-14.....Oil show 8 ft. sand; T.D. 2,360 ft; bailed dry; drlg. sandy shale 2,735 ft.

J. W. Clark's No. 1 Tidwell, NW cor. NW, Sec. 22-13-14..Rig up.

Gulf Ref. Co.'s No. 1 Dry, 2,390 ft. N, 200 ft. E, SW cor., Sec. 14-11-15.....Drlg. hard lime 3,418 ft.

S. A. Guy's No. 1 Dowling Bros., 469 ft. E, 382 ft. S, NW cor. NE, Sec. 31-14-14.....Derrick.

Bud Harrell's No. 1 Horton, 450 ft. E, 150 ft. N, SW cor., Sec. 4-11-11.....S.D. 1,060 ft.

Michlouzanna O. & G. Co.'s No. 1 Payne, 410 ft. S, 398 ft. E, NW cor., Sec. 12-11-16.....S.D. 2,600 ft.

Odell & Lawton's No. 1 Tidwell-Tull, 300 ft. N, 600 ft. E, SW cor. NW, Sec. 11-13-14.....S.W; show gas 3,004 ft; cmtd. bottom.

Pelham & Bunby's No. 1 Rhodes, C S½ SE, Sec. 32-13-14.....2,000 ft. oil, 200 ft. S.W; 5-ft. sand; slight show oil 2,985-90 ft; W.O.S.R; T.D. 3,009 ft.

Philp et al's No. 1 Talbot, 220 ft. S, 730 ft. W, NE cor. NW NE, Sec. 9-13-13.....Rig up.

R. O. Roy's No. 2 Nelson, SE cor. SE, Sec. 35-15-13.....Location.

H. E. Weichert's No. 1 Hallie Smith, NE SE, Sec. 31-14-15.....Rig up.

MOREHOUSE PARISH

Pelican Nat. Gas Co.'s No. 1 Tensas Delta Land Co., 1,320 ft. N, 660 ft. E, NW cor., Sec. 17-18-6.....Drlg. shale and boulders 2,106 ft.

NATCHITOCHES PARISH

W. M. Coats' No. 1 Collins, 730 ft. N, 50 ft. E, C, Sec. 28-9-10.....D.S. test 2,304 ft; dry; coring sandy lime 2,393 ft.

J. W. Cooper et al's No. 1 Cooper, NW SW, Sec. 35-11-10.Top chalk 1,280 ft; arranging D. S. test 1,280-90 ft.

S. D. McDaniel's No. 2 Clark & Morse, 800 ft. E, 350 ft. N, C, Sec. 23-5-6.....Tested 1,000,000 ft. gas and S.W. 3 ft; S.D. for orders; T.D. 2,536 ft.

Robeline O. & G. Co.'s No. 1 Winn, 558 ft. N, 348 ft. E, SW cor. SE, Sec. 7-8-9.....S.D. 1,600 ft.

RED RIVER PARISH

S. C. Lucas' No. 1 La. Pecan Co., Sec. 26-13-11.....Bailed down 1,000 ft; blew in estimated 2,000,000 ft. gas and show oil; 17-ft. sand; W.O.S.R; T.D. 2,476 ft.

Lucky Strike Oil Co.'s No. 1 Chaffraix, 200 ft. S, 200 ft. E, C, Sec. 33-12-10.....S.D. wtr. 1,550 ft.

Geo. L. Pace et al's No. 1 Clarkson, 200 ft. S, 200 ft. E, NW cor. NE, Sec. 30-12-9.....Fishing D.S. 2,710 ft.

RICHLAND PARISH

Austin & McDonald's No. 1 Hunt, 594 ft. N, 660 ft. E, SW cor., Sec. 13-17-5.....Cmtd. 6⅝-in. 2,285 ft.

W. C. Feazel's No. 1 Landrum, 620 ft. N, 4,573 ft. E, SW cor., Sec. 6-16-7.....Derrick.

Island Gas Co.'s No. 1 Noe, 1,902 ft. N, 660 ft. W, SE cor., Sec. 3-16-5.....Drlg. 2,263 ft.

Palmer Corp.'s No. 11 Rhymes England Planting Co., 2,033 ft. W, 660 ft. S, NE cor. NE, Sec. 12-16-5.....Derrick.

SABINE PARISH

LeGrand Oil Co., Inc.'s No. 1 J. W. Hale, 200 ft. N, 200 ft. E, SW cor. NE NW, Sec. 1-7-13.....Location.

Lohman & Walker's No. 1 Hubley, 330 ft. N, 330 ft. W, SE cor. SE NE, Sec. 21-7-11.....D.S. test 2-ft. sand 1,356 ft; dry; W.O.

Lohman et al's No. 1 Wyatt Lbr. Co., 150 ft. S, 330 ft. E, NW cor. NE SW, Sec. 18-4-11.....Rig up.

Longoria et al's No. 1 Belton, 330 ft. S, 330 ft. E, C, NE, Sec. 31-9-13.....Rig up.

Loring Oil Co.'s No. 1 Garner, 270 ft. N, 300 ft. E, SW cor. NW NE, Sec. 4-7-11.....Derrick.

Loring Oil Co.'s No. 1 Trammell, 250 ft. N, 250 ft. W, SE cor. SW NW, Sec. 4-7-11.....Began drlg. Sept. 7; cmtd. 10-in. 105 ft.

Magnolia Pet. Co.'s No. 1 Glauque, 484 ft. N, 390 ft. E, SW cor. NW SW, Sec. 26-7-14.....Drlg. hard lime 2,426 ft.

McDaniels & Lieber's No. 2 Batson, 480 ft. S, 220 ft. E, NW cor. SW SE, Sec. 16-8-12.....Drlg. 1,650 ft.

C. D. Neff, trustee's No. 1 Turner, 1,170 ft. S, 180 ft. W, NE cor. NW, Sec. 4-7-11.....Location.

Paramount O. & G. Co.'s No. 1 Woolems, 330 ft. N, 330 ft. W, SE cor. NE NW, Sec. 11-6-12.....S.D. 2,225 ft.

Pelican Nat. Gas Co.'s No. 4 La. Long Leaf Lbr. Co., 300 ft. S, 300 ft. E, NW cor. NW SW, Sec. 4-7-11...Cmtd. 6⅝-in. 2,275 ft; T.D. 2,284 ft.

Pelican Nat. Gas Co.'s No. 5 La. Long Leaf Lbr. Co., 200 ft. S, 200 ft. W, NE cor. NW SW, Sec. 4-7-11...Location.

Pelican Nat. Gas Co.'s No. 4 Sabine Lbr. Co., 330 ft. S, 330 ft. W, NE cor. NW NE, Sec. 11-7-12.....Rig up.

Philps et al's No. 1 Turner, 80 ft. N, 80 ft. W, SE cor. NW NW, Sec. 4-7-11.....Location.

D. H. Riddick's No. 1 Scretchfield, 400 ft. E, 400 ft. N, SW cor. NW SE, Sec. 18-9-12.....S.D. 3,280 ft.

H. T. Stacey et al's No. 1 Polly, NE cor. NE NE, Sec. 18-8-12.....Rig up.

The Texas Co.'s No. 1 Stille, 330 ft. N, 330 ft. W, SE cor. SW, Sec. 33-8-11.....Location.

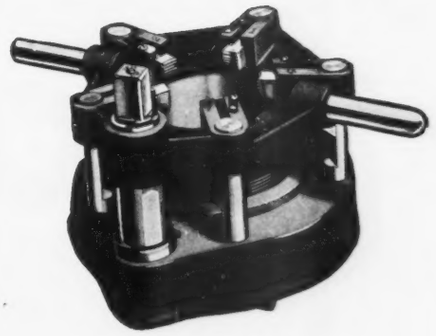
TENSAS PARISH

Stovall Drlg. Co.'s No. 1 Miller, NE SW, Sec. 18-10-10...D.S. test 1,010-17 ft; dry; drlg. 1,236 ft.

A. R. Willis et al's No. 1 Currey, 1,320 ft. S, 1,320 ft. E, NW cor., Sec. 39-11-12.....S.D. 2,300 ft.

WEBSTER PARISH

Coyle, trustee's No. 1 Frazer, 200 ft. N, 200 ft. E, SW cor. NE SE, Sec. 27-23-11.....Location.



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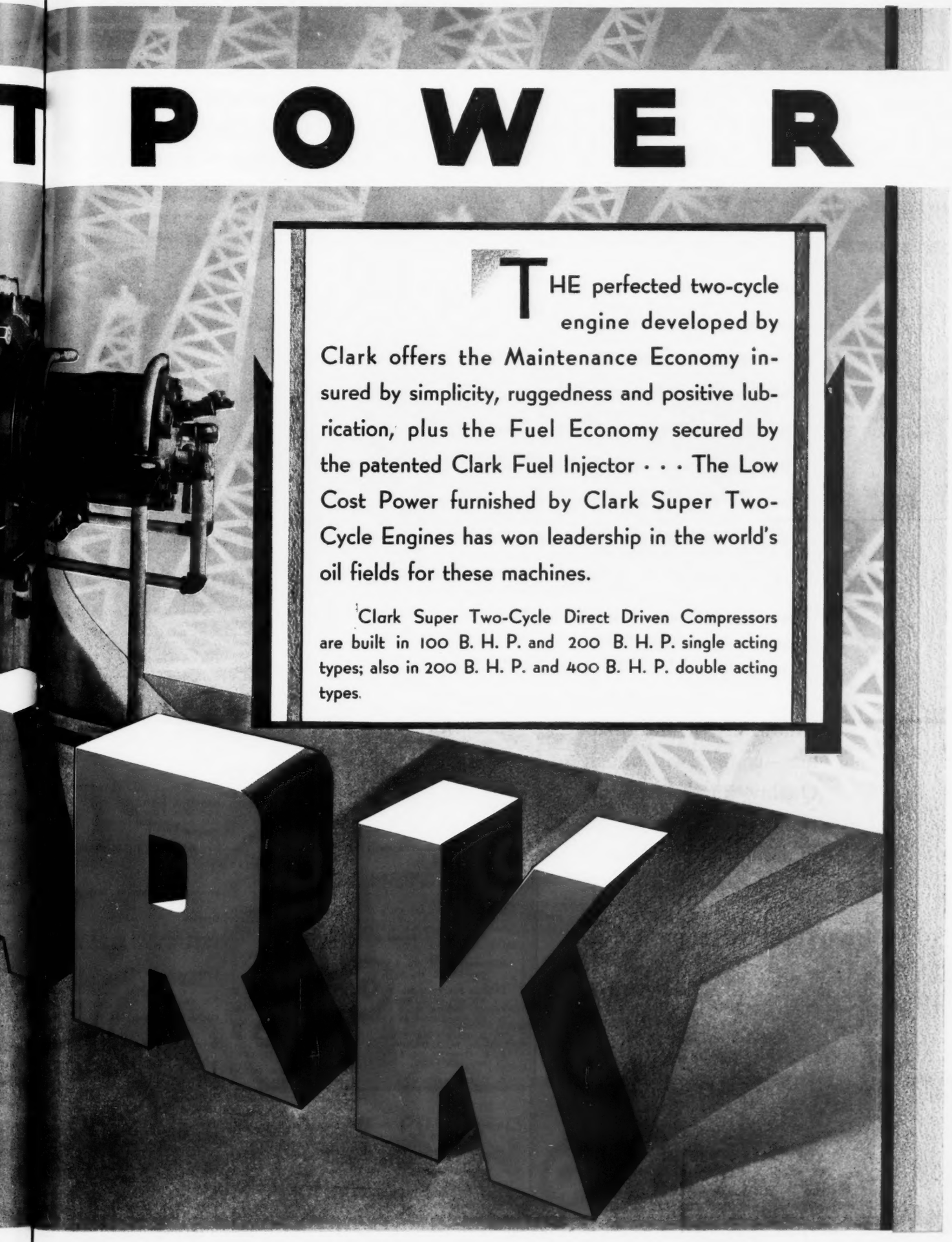

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J. P. Evans et al's No. 1 Crichton Co., NE cor. NW NE, Sec. 31-18-8.....D.S. test 1,750-1,841 ft; S.W; W. O; T.D. 1,853 ft.

ARKANSAS

CHICOT COUNTY

H. R. Smith's No. 1 Lytle, 660 ft. N, 660 ft. E, C, Sec. 31-18-3.....Began drlg. Sept. 3; cmtd. 10-in. 124 ft; drlg. 1,156 ft.

CLEBURNE COUNTY

Cosden Oil Co. of Ark.'s No. 1 Donophan, 100 ft. S, 660 ft. E, NW cor. SW SE, Sec. 19-9-10.....Drlg. 3,990 ft.

Donnelly-Craver et al's No. 1 Donophan Lbr. Co., SE cor. NW, Sec. 39-11-9.....S.D. 3,150 ft.

COLUMBIA COUNTY

S. Y. Dorfman et al's No. 1 Merritt, 923 ft. S, 160 ft. W, NE cor. SE NW, Sec. 25-19-22.....Top Arkadelphia 1,763 ft; top Nacatoch 1,861 ft; drlg. 1,950 ft.

FRANKLIN COUNTY

Red Bank Oil Co.'s No. 1 Edtin, SW cor., Sec. 33-10-26 Fishing tools 3,750 ft; cored.

GARLAND COUNTY

Givens et al's No. 1 Garrett, 660 ft. S, 660 ft. W, C, Sec. 1-8-19.....Waiting on bailing line; T.D. 3,790 ft.

HOT SPRINGS COUNTY

Anisman et al's No. 1 Hinson est., NE NE, Sec. 19-4-16. Cmtd. 6-in. 850 ft; T.D. 865 ft.

J. R. Lockhart's No. 1 Cunningham, 285 ft. S, 285 ft. W, NE cor., Sec. 11-5-16 (reported in Grant County in error).....Derrick.

LAFAYETTE COUNTY

Crawford Drlg. Co.'s No. 1 Vaughn, 200 ft. S, 200 ft. W, NE cor. SE NE, Sec. 25-19-25.....Rig up.

LINCOLN COUNTY

B. F. Thompson, trustee's No. 1 McGhee, 330 ft. S, 150 ft. W, C, Sec. 8-8-7.....Rigging up.

LITTLE RIVER COUNTY

A. L. Buck's No. 1 Greason, NW NW, Sec. 25-12-32.....S.D. 2,502 ft.

LOGAN COUNTY

J. H. Flowers' No. 1 J. H. White, Sec. 13-6-26.....U.R. 5 3/16-in. 3,570 ft. T.D 3,610 ft.

MILLER COUNTY

Big Bill Oil Co.'s No. 1 Dean, 200 ft. N, 200 ft. E, SW cor. NW SW, Sec. 30-15-25.....Drlg. 2,000 ft.

East Texas O. & G. Co.'s No. 1 Harvey, 400 ft. E, 300 ft. S, NW cor., Sec. 2-15-26.....Derrick.

E. & F. Oil Co.'s No. 1 E. L. Beck, 200 ft. S, 200 ft. E, NW cor. SW, Sec. 36-15-26.....Drlg. 1,240 ft.

Lentz et al's No. 1 Dale, 300 ft. S, 300 ft. E, NW cor., Sec. 25-15-26.....O.W.D.D; arranging to deepen. T.D. 2,842 ft.

Lentz et al's No. 2 Johnson, SE cor. NW, Sec. 24-15-16 Rig up.

OUACHITA COUNTY

Belmont et al's No. 1 Buck, SE cor. SE SW, Sec. 16-15-17 D.S. test 1,800-1,900 ft; dry; coring 1,905 ft.

Graves Bros.' No. 1 Walker, 350 ft. N, 280 ft. E, SW cor., Sec. 9-14-18.....Rig up.

A. B. Turner, trustee's No. 1 Dave Brown, 220 ft. N, 220 ft. E, SW cor., Sec. 23-15-18.....Began drlg. Aug. 19; cmtd. 10-in 103 ft.

PIKE COUNTY

E. R. Henderson's No. 1 Tilyou, 660 ft. W, 500 ft. S, NE cor. NE SE, Sec. 26-8-14.....Began drlg. Aug. 12; cmtd. 10-in 160 ft; claim oil show 650 ft.

POPE COUNTY

Cosden Oil Co.'s No. 1 Mo. Pac. R.R., 660 ft. N, 660 ft. E, SW cor. NW SE, Sec. 13-9-19.....Drlg. hard sand 4,864 ft.

SCOTT COUNTY

Arkansas Valley Gas Co.'s No. 1 Turner, C SE, Sec. 27-5-30.....Location.

Heavener O. & G. Co.'s No. 1 Riser, Sec. 36-4-26.....Straightening hole; T.D. 1,530 ft

SEBASTIAN COUNTY

W. M. Greeson's No. 1 Spears, Sec. 9-7-29.....Tested S.W. 3,515 ft; W.O.

Lavaca O. & G. Co.'s No. 1 Moore, C NW SW, Sec. 27-8-30.....Rig up.

Mansfield Gas Co.'s No. 14 fee, Lot 10, Sec. 1-4-31..... S.D. wtr. 1,027 ft.

Ozark Nat. Gas Co.'s No. 10 Weaver, 660 ft. N, 660 ft. W, SE cor. SE NE, Sec. 27-8-30.....Straightening hole; T.D. 2,640 ft

Ozark Nat. Gas Co.'s No. 1 Bates, C SE NW, Sec. 28-8-30 Drlg. shale 1,420 ft.

UNION COUNTY

S. B. Hickman's No. 1 Hogg, 330 ft. S, 150 ft. E, NW cor. SE SE, Sec. 35-16-17.....Dry 1,987-2,079 ft; fishing 2,157 ft.

Marine Oil Co.'s No. 2-B Thompson, Sec. 10-18-13.....Location.

Marine Oil Co.'s No. 1-F Winn, Sec. 10-18-13.....Drlg. lime 3,000 ft.

Modisette Drlg. Co.'s No. 4 Union Sawmill, 330 ft. W, 300 ft. N, SE cor., Sec. 14-18-14.....Location.

VAN BUREN COUNTY

Glenn Kohle et al, trustees' No. 1 Scalan, 200 ft. S, 200 ft. W, NE cor. SE NW, Sec. 5-19-13.....S.D. 50 ft.

WASHINGTON COUNTY

Delbert & Graves' No. 1 Cunningham, Sec. 14-15-32.....S.D; W.O. 602 ft.

C. H. Willoughby's No. 1 Jones, Sec. 34-16-30.....S.D; W.O. 1,650 ft.

Lincoln Leaseholding Synd.'s No. 1 Lincoln, Sec. 30-15-32 U.R. 8-in. to T.D. 1,590 ft

H. H. Taylor et al's No. 1 Runny, C NE SW, Sec. 1-13-19. Fishing 1,005 ft

YELL COUNTY

Tegmeier & Luckett's No. 1 Falcon, Sec. 36-7-21.....S.D. fuel 5,305 ft; black shale

EAST TEXAS

BOWIE COUNTY

Joe Burnham et al's No. 1 G. W. Burnett, 150 ft. W, 400 ft. S, NE cor. G. W. Burnett 76 ac., in W. H. Janes Sur.....Began drlg. Aug. 28; S.D. 80 ft. title work.

Maud-Redwater Oil Co.'s No. 1 Merritt, Y. S. McKinney Sur.....Derrick.

Lee Timberlake's No. 1 Tidwell, 2,800 ft. N, 300 ft. W, SE cor., Jos. Eskell Sur.....Coring shale 2,830 ft; D.S. test 2,695-2,730 ft; 21 fourbles S.W

CAMP COUNTY

McDonald Bros.' No. 1 Tillery, 150 ft. E, 450 ft. S, NW cor. 127-ac. tr., in J. H. Murphy Sur.....Location.

CASS COUNTY

Phillips Pet. Co.'s No. 1 J. R. Olds, 300 ft. N, 170 ft. E, SW cor., J. A. Stephenson Sur.....Rig up.

John C. Rogers' No. 1 I. E. Lanier, 573 ft. N, 879 ft. W, SE cor. Lanier 86 acres in K. E. Welborn Sur.....Coring sand rock 615 ft.

MARION COUNTY

W. D. Chew's No. 1 Fee, 2,350 ft. W, 1,275 ft. N, SE cor., W. J. Hamilton Sur.....Drlg. 6-in. plug 2,532 ft

P. E. Hussey's No. 1 A. A. Trammell, Chas. Lockhart Sur.....S.D. wtr. 1,334 ft.

RED RIVER COUNTY

D. M. Buffington's No. 1 Hossler, E. Hughhart Sur.....S.D. 2,865 ft.

Johnson Pet. Co.'s No. 2 Randolph, Edw. Dean Sur.....Swedging; 2 jts. collapsed 8-in, arranging to cement 6⅝-in and packer 2,182 ft.

SABINE COUNTY

Benedum & Trees Oil Co.'s No. 1 Nona Mills Lbr. Co., Jas. Mason Sur.....Coring chalk 3,084 ft.

SHELBY COUNTY

Chapperall Oil Co.'s No. 2 Holt, Matthew Moore Sur.....Coring hard lime 5,350 ft

G. R. Ridgeway's No. 1 G. D. Parker, 4,980 ft. E, 750 ft. N, SW cor., Jessie McKelvey Sur.....Derrick.

MISSISSIPPI

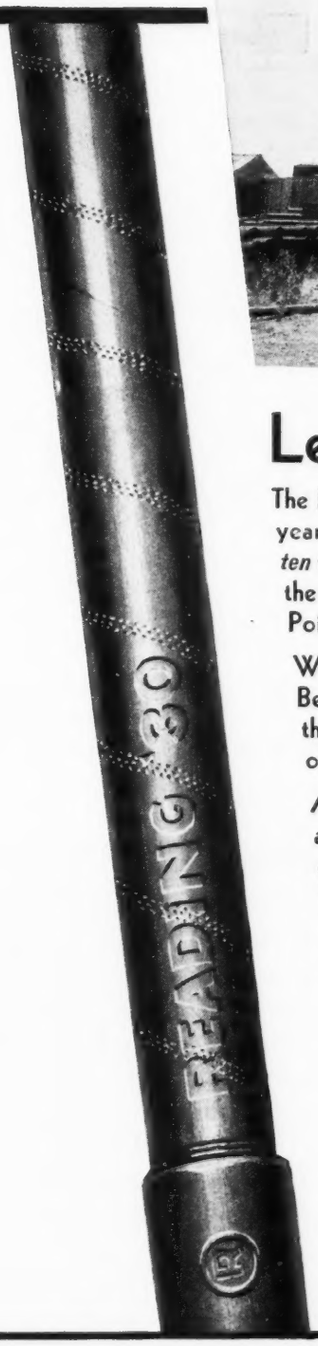
ADAMS COUNTY

A. C. Glassell et al's No. 1 Artonish, 75 ft. S, 75 ft. W, NE cor., Sec. 29-8n-2w.....Coring below 2,000 ft.

ALCORN COUNTY

Alcorn Pet. Co.'s No. 1 Matthews, SE cor., Sec. 14-2s-7e..Fishing 6-in. and tools 2,382 ft, T.D. 2,735 ft.

Reading Casing in use on Tidal Oil Company's University "I" Lease, Well No. 9



Let's Do Some Figuring » »

The life of ordinary casing, records show, is only about four years. Reading 5-Point Casing has an average life of from *ten* to *twelve* years. Subtract four from twelve and you have the difference between ordinary casing and Reading 5-Point Casing!

Why does Reading 5-Point Casing last so much longer? Because it's made of Genuine *Puddled* Wrought Iron—the original, rust-resisting material with a *proved* record of endurance!

All Reading 5-Point Casing, Tubing and Line Pipe are made of Genuine *Puddled* Wrought Iron, produced only by the time-tested puddling process. To prevent mistakes, we put our name and indented spiral mark on every length.

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Chicago . New Orleans . Buffalo . Houston
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Reading pipe distributed by:
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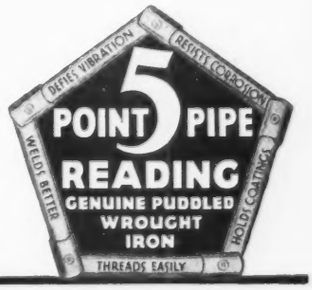
Republic Supply Co. . Superior Tube Co.
Our own stocks at Houston, Texas

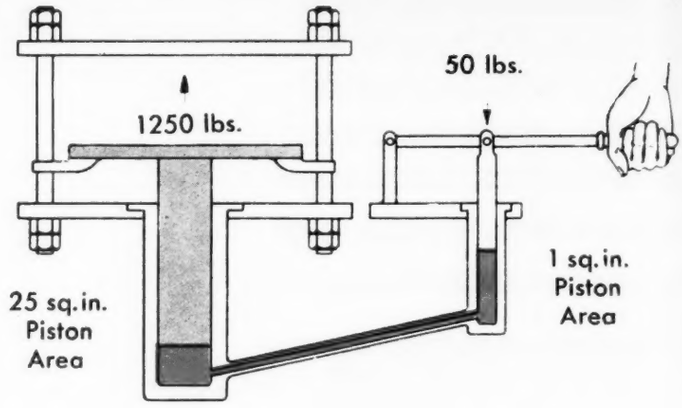


GENUINE PUDDLED WROUGHT IRON READING PIPE

DIAMETERS RANGING FROM 1/8 TO 20 INCHES

Science and Invention Have Never Found a Satisfactory Substitute for Genuine Puddled Wrought Iron

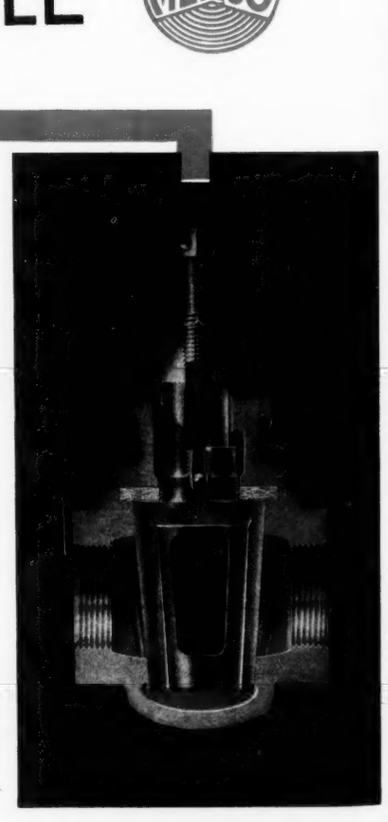
PASCAL'S LAW applied to Nordstrom Valves



THE PERFECT APPLICATION OF A PRINCIPLE

MERCO

LONG AGO Pascal gave to the scientific world the law or principle which explains the transmissibility of pressure in fluids. In brief it states that "if the pressure at any point within a rigid vessel be increased there will be an equal increase of pressure at every other point." Hence in the hydraulic press a relatively low pressure in the smaller cylinder transfers an equal pressure to every unit of area in the larger cylinder and the resultant upward force becomes tremendous. Likewise in the Nordstrom Valve Pascal's Principle has a perfect application. A small force applied to lubricant screw creates a great upward pressure to the lower end of the valve plug and prevents sticking under any working condition. A perfect seal around the plug is maintained.



Made in all sizes for various purposes. Working pressures 50 to 3000 lbs. per square inch.

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Boston - 184 Boylston St.
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Detroit - 2842 West Grand Blvd.
El Paso - 111 So. Virginia St.
Houston - Petroleum Bldg.
Los Angeles - 556 So. San Pedro St.
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New York - 11 W. 42nd St.
Pittsburgh - Clark Bldg.
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Philadelphia - Brown, Wilson & Company, 1600 Arch St.
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NORDSTROM VALVES

CLAY COUNTY

Ohio Oil Co.'s No. 1 Wells, NE cor., Sec. 16-15-5.....Location.

CHICKASAW COUNTY

Hightower & Golson's No. 1 Flemming, NE cor., Sec. 20-13-3 .....Fishing 8¼-in. csg. 1,414 ft.

HINDS COUNTY

Big Block Oil Co.'s No. 1 Southern Christian Institute, C N½ NE, Sec. 30-6-4 ..... S.D. 1,910 ft.
Feazel O. & G. Co.'s No. 1 Millstein, NW cor. NW NW, Sec. 2-5-1e ..... Cmtd. 6⅝-in. 2,404 ft.
Gulf Ref. Co.'s No. 1 City of Jackson, 2,423 ft. N, 731 ft. W, SE cor., Sec. 10-5-1e .....Cmtd. 10-in. 80 ft; drlg. shale 1,000 ft.
Gulf Ref. Co.'s No. 1 Crane, 660 ft. S, 660 ft. W, NE cor., Sec. 26-6-1e .....Drlg. shale 2,337 ft.
Interior Oil Co.'s No. 1 Belhaven Heights, 1,165 ft. W, 814 ft. S, NE cor., Sec. 2-5-1e ..... Derrick.
Jackson Oil Co.'s No. 1 Central Cotton Oil Co., NW cor. SW NW, Sec. 3-5-1e .....Rig up.
Jackson O. & G. Co.'s No. 1 Capital Land & Inv. Co., Sec. 29-6-1e ..... Drlg. 2,179 ft.
Jackson O. & G. Co.'s No. 2 Mays, SW cor. SE NE, Sec. 2-5-1e ..... S.D; W.O. 2,737 ft.
Dr. Barney Kennedy's No. 1 Fee, 150 ft. E, 200 ft. N, SW cor. NE NE, Sec. 34-6-1e .....Location.
Lefleur O. & G. Co.'s No. 1 Chadwick-Brown, 550 ft. S, 780 ft. W, NE cor. SW NW, Sec. 11-5-1e .....Derrick.
Cleve Love et al's No. 1 Ridgeway-McGee, 100 ft. W, 500 ft. S, C, Sec. 2-5-1e .....Cmtd. 10-in. 60 ft; drlg. 2,100 ft.
Love Pet. Co.'s No. 1 Crisler, 65 ft. W, 360 ft. S, NE cor. NW SW, Sec. 2-5-1e .....Began drlg. Aug. 30; drlg. 1,300 ft.
Love Pet. Co.'s No. 1 Morton Lbr. Co., 100 ft. W, 200 ft. N, SE cor. SW SW, Sec. 34-6-1e .....Derrick.
Miss. Pet. Co.'s No. 1 Baptist Orphanage, 175 ft. E, 130 ft. N, SW cor. SE SE, Sec. 28-6-1e .....Derrick.
Miss. Pet. Co.'s No. 1 Solvent Investment Co., NE cor. NE SW SW, Sec. 14-5-1w .....Began drlg. Sept. 2; drlg.
Miss-Tex Oil Co.'s No. 1 Negro Fair Assn., SW cor. NW SE, Sec. 28-6-1e .....Drlg. shale 1,400 ft.
Mrs. Reeder et al's No. 1 State, SE cor. NW NW, Sec. 25-6-1e .....W.O; T.D. 2,905 ft.
Tri-State O. & G. Co.'s No. 1 Wilson, SW cor. SE NE, Sec. 23-6-1e ..... Derrick.
J. A. Weir et al's No. 1 Holliday & Ross, NW SE, Sec. 8-6-2e .....S.D; W.O. 2,653 ft.
Universal Gas Co.'s No. 1 Sharbrough, SW cor. SE, Sec. 28-6-1e ..... Began drlg. July 29; S.D. W.O 88 ft.

HUMPHRIES COUNTY

E. S. Steele et al's No. 1 C. B. Box, SE cor. SE NE, Sec. 25-14-4w .....Set 12½-in 60 ft; S.D.

LAUDERDALE COUNTY

Lauderdale O. & G. Co.'s No. 1 Lackey, 990 ft. S and E, NW cor. NE, Sec. 2-7-16 .....Tested S.W. 3,252 ft; S.D. 3,420 ft.
Meridian O. & G. Co.'s No. 1 Hauser, Sec. 33-8-18 .....S.D; W.O; sandy shale 2,826 ft.
J. R. Smith Oil Co.'s No. 1 C. F. Craig, Sec. 2-16-14 .....Derrick.

LAFAYETTE COUNTY

Banks-Goode et al's No. 1 May, 113½ rds. S, 26 rds. E, NW cor. SW, Sec. 22-10-1w .....Derrick.

LINCOLN COUNTY

Lincoln O. & G. Co.'s No. 1 Pat Case, NE cor. NE, Sec. 21-3-6 ..... S.D; W.O. 2,231 ft.

MADISON COUNTY

Barney Kennedy's et al's No. 1 Raymond, 300 ft. E, 1,800 ft. N, SW cor., Sec. 32-7-2e .....Cmtd. 12½-in. 706 ft.

MONROE COUNTY

Amory Dev. Co.'s No. 1 Bourland, Sec. 2-13-19 .....S.D. 2,912 ft; bailer lost in hole
Amory Pet. Co.'s No. 1 Hall, Sec. 8-13-19.....Shot 2,402-18 ft; small S.O; arranging to shoot 2,387-95 ft.
Associated Oil Co.'s No. 1 School, SW cor. SW SE, Sec. 16-15-17 ..... Began drlg. Aug. 26; S.D. 32 ft.
Park Bowser et al's No. 1 Cowart, second hole, Sec. 2-12-19 .....S.D. 30 ft.

RANKIN COUNTY

Gulf Ref. Co.'s No. 1 Hartfield, 1,980 ft. S, 660 ft. E, NW cor., Sec. 7-5-2e .....Cmtd. 9-in. 2,354 ft.
Millstein O. & G. Corp.'s No. 1 Hartfield, 1,000 ft. W, 62 ft. N, SE cor. NE, Sec. 12-6-1e .....Derrick.
R. A. Moore et al's No. 1 Interior Lbr. Co., Sec. 28-6-1e...S.D. 900 ft.
Interior Oil Co.'s No. 1 Moore, 660 ft. N, 660 ft. W, SE cor. NW NW, Sec. 28-6-2e .....S.D. 900 ft.
Pearl River O. & G. Co.'s No. 1 Pate, 1,380 ft. N, 1,426 ft. W, SE cor., Sec. 12-5-1e .....Drlg. shale 1,550 ft.
Dr. S. D. Raymond's No. 1 Graves, 1,810 ft. N, 3,210 ft. W, SE cor., Sec. 12-5-1e .....Derrick.
Southern Pet. Co.'s No. 1 Investment, 2,170 ft. N, 1,790 ft. W, SE cor., Sec. 12-5-1e .....Began drlg. Sept. 2; drlg.

WARREN COUNTY

El Dorado Oil Co.'s No. 1 Dornbush, Sec. 8-18-15.....S.D. 2,475 ft; 2,350 ft. D.S. in hole; W.O.

YALOBUSHA COUNTY

Carter Oil Co. and J. W. Collett's No. 1 Blackmur, 330 ft. S, 990 ft. W, Sec. 14-11-4 .....Fishing 2,300 ft.

YAZOO COUNTY

Amerada Pet. Corp.'s No. 1 Doherty, SW SW, Sec. 24-12-2 .....Drlg. sandy lime 5,133 ft.

ALABAMA

LAMAR COUNTY

Griggs & Knapp's No. 1 Wefel, Sec. 25-12-14.....T.A. 1,740 ft.

LAUDERDALE COUNTY

A. D. Morton et al's No. 10 O'Neal est., Sec. 8-2s-13w.... Cmtd. 12½-in. 125 ft; drlg. hard lime 905 ft.

MARION COUNTY

Hobson et al's No. 1 John Clark, SE, Sec. 29-11-14 .....Derrick pattern.

WASHINGTON COUNTY

S. A. Hobson's No. 1 Hobson Bros., Sec. 9-8-2 .....S.D; W.O; flow at 1,450 ft.
S. A. Hobson's No. 1 Wilson, Sec. 27-7-1 .....Fishing bailer; T.D. 881 ft.
Oscar Brown's No. 2 Land & Cotton Co., Sec. 25-3-2w.....Drlg. 760 ft.

LOUISIANA-ARKANSAS PROVEN AREAS

(Continued from Page 54)

BOSSIER PARISH—SLIGO

La. G. & F. Co.'s No. 8 Thigpen-Herold, 660 ft. W, 660 ft. N, SE cor. SE SW, Sec. 13-17-12.....Cmtd. 9-in. 1,762 ft.
La. G. & F. Co.'s No. 1 Webb, 4,650 ft. W, 660 ft. S, NE cor., Sec. 24-17-12.....Location.
Woodley Pet. Co.'s No. 4 Schuler, 100 ft. E, C, Sec. 13-17-12 .....Cmtd. 6⅝-in. 1,696 ft.

CADDO PARISH—GREENWOOD

Calatex O. & G. Co.'s No. 1 Edgar, 1,460 ft. S, 1,900 ft. E, NW cor., Sec. 17-16-16.....Location.
Calatex O. & G. Co.'s No. 1 McAnn-Alfred, 1,810 ft. S, 970 ft. E, NW cor., Sec. 17-16-16.....Location.
Calatex O. & G. Co.'s No. 1 Hudson, 2,395 ft. N, 660 ft. E, SW cor., Sec. 8-16-16.....Drlg. 1,780 ft.

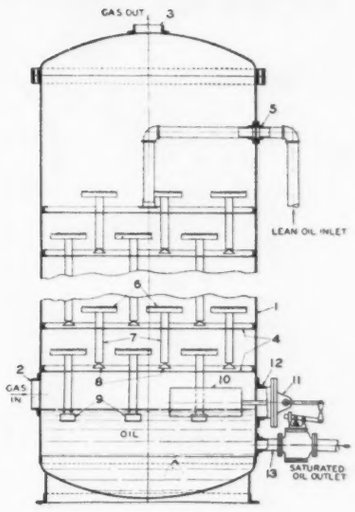
CADDO PARISH—MOORINGSPORT

J. W. Burton's No. 3 Burton, 1,050 ft. S, 450 ft. E, NW cor., Sec. 7-20-15 .....Derrick.

CADDO PARISH—OIL CITY

The Texas Co.'s No. 73 Levee Board, 1,642 ft. E, 780 ft. N, SW cor. SW SE, Sec. 27-21-16.....Location.

Billions of Bubbles



Look Into This Absorption Question

THE very heart of a natural gasoline plant is its absorption equipment. There can be no temporizing in the choice of absorbers. Your absorber is either an asset or a liability; there's no half-way ground.

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The Campbell "Oil-Froth" absorber, because of awarded superiority in test after test, has won an enviable reputation for efficiency. It is as natural for the operator to specify "Oil-Froth" absorbers as it is for the church architect to specify Tiffany windows.

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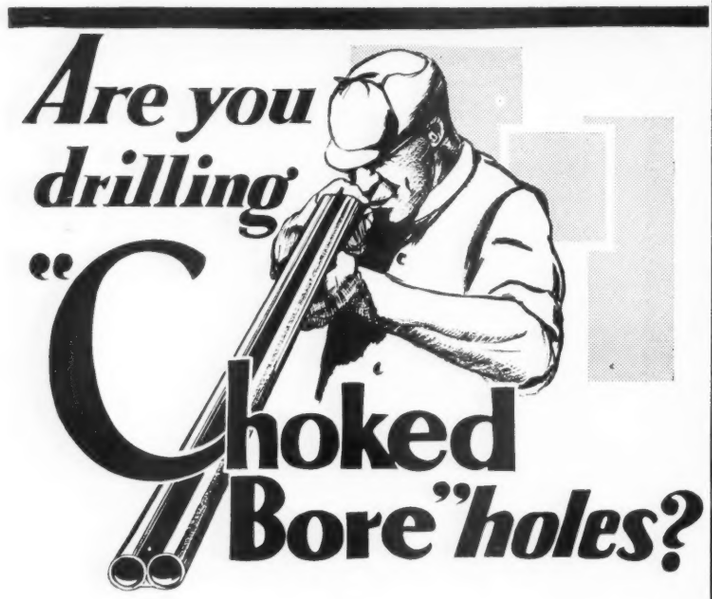

Are you drilling "Choked Bore" holes?

DOES your drill pipe stick and hang-up as you're running in . . . are you losing valuable drilling time trying to get a new bit to bottom . . . does the "tight hole" bugbear haunt you as you are running casing . . . is your well a series of tapers—"choked bored"?

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Mounted on the reaming edges of each bit used from the "grass roots to the bottom," will give you assurance that your well will be out to gauge *all the way down.*

BORIUM works equally successfully and satisfactorily—on either fish-tail, four-way, or core bit.

STOODY COMPANY

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WHITTIER, CALIFORNIA

CADDO PARISH—PINE ISLAND

Shreveport Oil Corp.'s No. 1-A Muslow, 150 ft. S, 150 ft. E, NW cor., Sec. 32-21-15.....Cmtd. 8-in. 1,260 ft; cored; reported drlg. 1,781 ft.

DE SOTO PARISH—HOLLY

Standard Oil Co.'s No. 2 Dowling Bros., 330 ft. S, 330 ft. W, NE cor. SW NE, Sec. 5-13-13.....W.O.S.R; 8 ft. sandy shale; T.D. 2,848 ft.

Standard Oil Co.'s No. 3-A Farmer, 330 ft. N, 330 ft. W, SE cor. NW NE, Sec. 5-13-13.....Began drlg. Sept. 3; cmtd. 10-in. 103 ft.

LA SALLE PARISH—URANIA

Montugu Oil Co.'s No. 8 Zenoria Lbr. Co., 710 ft. S, 250 ft. W, NE cor., Sec. 10-9-1e.....W.O.S.R. 1,510 ft.

MOREHOUSE PARISH

Bahan & Bahan's No. 4 Feazel, 900 ft. W, 330 ft. S, NE cor., Sec. 2-20-4.....Location.

Grecian Bend Gas Co.'s No. 1 J. D. Sandidge et al, 660 ft. W, 1,980 ft. N, SE cor. NE, Sec. 2-20-4.....Location.

Greenwood Prod. Co.'s No. 1 Burrell, 713 ft. W, 1,083 ft. N, SE cor. NE, Sec. 21-20-4.....Began drlg. Sept. 3; cmtd. 12½-in. 166 ft; 8-in. 820 ft.

La. G. & F. Co.'s No. 26 Crossett, 645 ft. E, 574 ft. S, NW cor., Lot 9, Sec. 33-21-5.....Milling 6-in. csg. 2,195 ft; T.D. 2,380 ft.

Ouachita Nat. Gas Co.'s No. 2 Cole, 660 ft. S, 613 ft. W, NE cor., Sec. 13-20-4.....Derrick.

Ouachita Nat. Gas Co.'s No. 6 Sandidge, 732 ft. S, 1,209 ft. W, NE cor. SE, Sec. 23-20-4.....Bailing 6-in. csg; T.D. 2,098 ft.

Ouachita Nat. Gas Co.'s No. 7 Sandidge, 1,047 ft. N, 694 ft. E, SW cor. NW, Sec. 24-20-4.....Derrick.

Southern Carbon Co.'s No. 13 Tensas, 660 ft. S, 1,320 ft. W, NE cor., Sec. 4-20-4.....Drlg. 1,650 ft.

OUACHITA PARISH

Amalgamated Co.'s No. 1-B Kate Cole, 660 ft. N, 660 ft. E, SW cor. NE SW, Sec. 25-20-4.....Drlg. 1,760 ft.

C. W. Fierson's No. 1 Haynes, 1,297 ft. N, 906 ft. W, SE cor., Sec. 9-17-3.....Began drlg. Sept. 3; drlg. 110 ft.

Greenwood Prod. Co.'s No. 1 White, 1,306 ft. W, 660 ft. N, SE cor. NW NE, Sec. 36-19-3.....Began drlg. Sept. 1; cmtd. 12½-in. 156 ft; 8-in. 778 ft.

Industrial Gas Co.'s No. 3 fee, 541 ft. S, 531 ft. E, NW cor. NE SW, Sec. 6-18-4.....Cmtd. 9-in. 862 ft; drlg. 1,461 ft.

Jordan Drlg. Co.'s No. 7 Cole, 265 ft. S, 1,459 ft. W, NE cor., Sec. 49, in Sec. 50-18-4.....Location.

Jordan Drlg. Co.'s No. 1 J. P. Parker, 950 ft. N, 485 ft. W, cor. Secs. 41, 9 and 16, in Sec. 41-18-4.....Cmtd. 6-in. 2,145 ft.

Jordan Drlg. Co.'s No. 1 School, 216 ft. S, 244 ft. W, NE cor. NW, Sec. 16-18-4.....Derrick.

Magnolia Pet. Co.'s No. 1 Breard, 550 ft. N, 660 ft. W, SE cor. NW NE, Sec. 15-18-4.....Cmtd. 8⅛-in. 2,180 ft; D.S. test 2,184-2,210 ft; 2,000,000 ft. gas

Pipes & Mack's No. 2 Union Gas Products Co., 296 ft. W, 528 ft. N, SE cor. SW, Sec. 7-18-5.....Location.

United Carbon Co.'s No. 6 Spade, 1,180 ft. S, 140 ft. E, NW cor., Sec. 27-19-4.....Location.

RICHLAND PARISH

W. C. Feazel's No. 1 R. B. Simon, 2,406 ft. W, 2,020 ft. S, NE cor., Sec. 11-16-6.....Rig moved; derrick.

Franklin O. & G. Co.'s No. 1 Thompson, 660 ft. N, 165 ft. W, SE cor. NE, Sec. 14-16-6.....Location.

Hope Prod. Co.'s No. 1 J. E. Duff, 660 ft. N, 1,980 ft. W, SE cor., Sec. 15-16-6.....Cmtd. 6-in. 2,285 ft.

La. G. & F. Co.'s No. 1 Etheridge, 1,412 ft. S, 770 ft. E, NW cor. NE, Sec. 28-17-6.....Cmtd. 6-in. 2,300 ft.

Northern La. Nat. Gas Co.'s No. 5-B McCoy, 1,650 ft. S, 660 ft. W, NE cor., Sec. 17-16-6.....Cmtd. 6-in. 2,300 ft.

Northern La. Nat. Gas Co.'s No. 1 McKay, 681 ft. W, 559 ft. N, SE cor. SW, Sec. 22-16-6.....Arranging test; T.D. 2,450 ft.

Palmer Corp.'s No. 1-B Boykin, 177 ft. S, 787 ft. E, C, Sec. 33-17-6.....Location.

Palmer Corp.'s No. 1 Rhymes-Earle, 1,980 ft. S, 1,394 ft. W, NE cor., Sec. 36-17-5.....**Rig up.**

Palmer Corp.'s No. 2 Rhymes-Earle, 3,486 ft. W, 1,327 ft. S, NE cor., Sec. 36-17-5.....Location.

Palmer Corp.'s No. 10 Rhymes-England, 1,245 ft. S, 700 ft. W, NE cor., Sec. 7-16-6.....Derrick.

Palmer Corp.'s No. 11 Rhymes-England, 2,033 ft. W, 660 ft. S, NE cor. NE, Sec. 12-16-5.....Derrick.

Richland Prod. Co.'s No. 3 M. L. McCoy, 1,980 ft. S, 662 ft. W, NE cor., Sec. 29-16-6.....Drlg. 2,350 ft.

Southern Carbon Co.'s No. 1 J. A. Clements, 1,320 ft. S, 1,980 ft. W, NE cor., Sec. 10-16-6.....Location.

Southern Carbon Co.'s No. 1-B Hallock, 1,622 ft. N, 990 ft. W, SE cor. NW, Sec. 1-16-6.....Drlg. 1,150 ft.

Southern Carbon Co.'s No. 1 G. Harris, 10 ft. S, 660 ft. W, NE cor., Sec. 10-16-6.....Location.

Southern Carbon Co.'s No. 1-C Hemler, 1,164 ft. S, 888 ft. W, NE cor., Sec. 14-16-6.....Location.

Southern Carbon Co.'s No. 2-C M. L. McCoy, 1,880 ft. N, 5,024 ft. E, SW cor., Sec. 1-16-6.....Cmtd. 8-in. 902 ft; drlg. 1,100 ft.

Southern Carbon Co.'s No. 6 F. B. and E. A. Sartor, 2,640 ft. N, 2,031 ft. W, SE cor., Sec. 24-16-5.....Cmtd. 6-in. 2,285 ft.

Southern Carbon Co.'s No. 1-B H. L. Thomason et al, 2,310 ft. W, 100 ft. S, NE cor., Sec. 23-16-6.....Drlg. 2,295 ft.

Southern Carbon Co.'s No. 1-C Thomason, 1,980 ft. N, 1,400 ft. W, SE cor., Sec. 14-16-6.....Location.

United Carbon Co.'s No. 1 Boughton, 3,244 ft. E, 4,693 ft. N, SW cor., Sec. 1-16-6.....Rig up.

United Carbon Co.'s No. 1 Noble, 530 ft. W, 1,255 ft. S, cor. Secs. 5, 6 and 37, in Sec. 37-15-6.....Drlg. 2,290 ft.

United Carbon Co.'s No. 1 L. Williams, 1,980 ft. S, 1,980 ft. W, NE cor., Sec. 33-16-6.....Began drlg. Sept. 7; cmtd. 12-in. 180 ft.

SABINE PARISH—PLEASANT HILL

Ark. Fuel Oil Co.'s No. 14 Logan, 1,035 ft. N, 241 ft. W, C, Sec. 33-10-12.....W.O.S.R; 8-ft. sand; T.D. 3,230 ft.

F. A. Bartlett, Jr.'s No. 1 Logan, 200 ft. S, 200 ft. E, NW cor., Sec. 27-10-12.....S.D. wtr. 1,764 ft.

A. C. Glassell's No. 1 Logan Oil Co., 300 ft. E, C, Sec. 23-10-13.....S.D. wtr; T.D. 1,710 ft.

SABINE PARISH—ZWOLLE

Ark. Fuel Oil Co.'s No. 1 Susie Russell, 330 ft. N, 330 ft. E, SW cor. E½ NW NE, Sec. 26-8-12.....Began drlg. Sept. 3; cmtd. 10-in. 303 ft; drlg. 726 ft.

Tom Davis' (was T. D. Allison's) No. 1 Holliday, Sec. 31-8-12, Zwolle Townsite.....S.D. wtr. 1,350 ft.

F. M. Hood's No. 1-B (was No. 2) Winston, 700 ft. E, 425 ft. S, NW cor., Sec. 31-8-12, Zwolle Townsite.....S.D. 1,065 ft.

Huber & Mann's No. 1 Newton, 330 ft. S, 330 ft. E, NW cor. NE SW, Sec. 25-8-12.....W.O.S.R; full oil; T.D. 2,417 ft.

Ab Jones et al's No. 1 Ferguson, 330 ft. N, 330 ft. W, SE cor. NE SW, Sec. 33-8-12.....Rig up.

Lacey Pet. Co.'s No. 1 Tatum, 350 ft. W, 200 ft. N, SE cor. SW NE, Sec. 26-8-12.....Top chalk 2,301 ft; cmtd. 6⅝-in. 2,263 ft; T.D. 2,303 ft.

Lacey Burkett Co.'s No. 1 Danna, 316 ft. E, 200 ft. S, C, Sec. 26-8-12.....Drlg. 1,060 ft.

Lanier & Tarver's No. 1 Newton, 530 ft. S, 530 ft. E, NW cor. NW SW, Sec. 25-8-12.....Began drlg. Aug. 23; cmtd. 10-in. 90 ft; S.D. wtr.

Loring Oil Co.'s No. 10 Bowman-Hicks, 330 ft. N, 330 ft. E, SW cor. NE SE, Sec. 33-8-12.....S.D. 2,664 ft.

Loring Oil Co.'s No. 12 Bowman-Hicks, 330 ft. S, 345 ft. W, NE cor. SE NE, Sec. 33-8-12.....Top chalk 2,405 ft; cmtd. 6⅝-in. 2,330 ft; T.D. 2,409 ft.

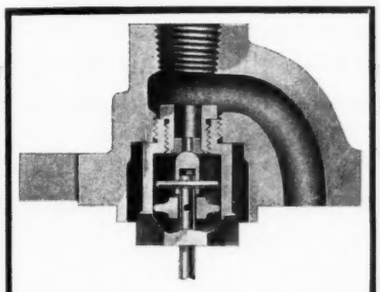
Loring Oil Co.'s No. 2 Sabine Lbr. Co., 1,430 ft. E, 340 ft. N, C, Sec. 34-8-12.....100 ft. oil in hole; fishing 2 joints D.S; T.D. 2,600 ft.

Trap on mineral seal oil scrubber

INSTALLATION of Strong traps is never an experiment for a refinery. Positive intermittent drainage of condensate is the work required of any trap, and every Strong trap in use meets this requirement. Design of Strong traps is of course of fundamental importance. These traps have always been built carefully and accurately in all their parts. *ANUM-METL,* an almost indestructible alloy, is used for valve seats and discs, insuring an efficiency so positive that Strong has always guaranteed traps tight for one year from installation without exception, regardless of pressure and temperature.

Use of the finest materials in manufacture has become widely known as characteristic of Strong construction. Large stocks in a complete range of sizes has long served to inspire confidence that Strong engineers keep abreast of the needs and sudden demands of the oil industry.

Based upon actual capacities, Strong traps are most economical to buy; based upon uninterrupted efficiency, Strong traps are cheapest to operate. Ask your nearest mill supply house about them, or write for Bulletin 100-A, the Refinery and Gasoline Plant Catalog.



Seats and discs of Strong Steam Traps are made of *ANUM-METL.*

STRONG CARLISLE & HAMMOND

For the gasoline plant and refinery there are Strong Anti-Freeze Relief Valves, Atomizing or Blending Valves, Cushion Non-Return Valves for compressor and field lines, Gas Engine Stops,

Gasoline and Steam Separators, Mineral Seal Oil Traps, Separating Traps, Vacuum Traps, Lifting Traps, Steam Traps, and combination Vacuum-Pressure Relief Valves.

MANUFACTURERS OF STRONG SPECIALTIES—CLEVELAND, OHIO

Going to redeepen your wells or repressure the oil sands?

In case your wells are not already equipped with the Regan Control Head you can still change the hook-up and place your wells on the SAFE side ready for any pressure.

The progressive illustrations show one of the methods of adapting the Regan Control Head to an old well previously equipped with gas packing clamps.

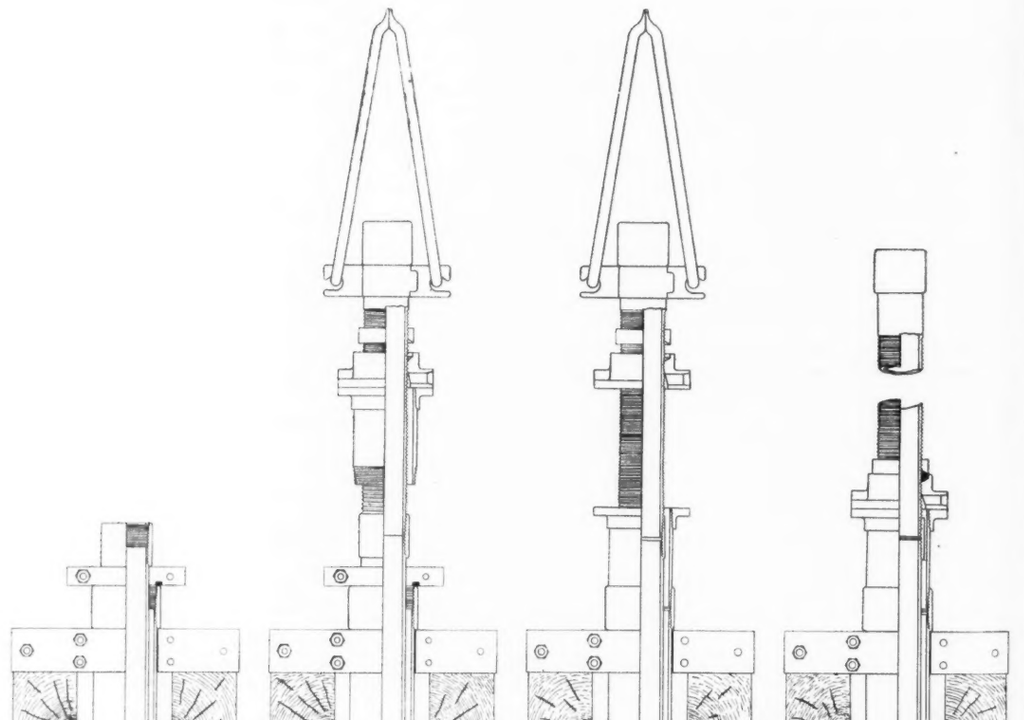


FIG. 1

Shows well in its original state, with gas packing clamps.

FIG. 2

Shows the entire head in its disassembled state made up on the inner string for the purpose of pulling sufficient tension in order to remove the gas packing clamps.

FIG. 3

With the tension maintained on the inner string and the gas packing clamps removed, the bottom flange with the aid of the short nipple is made up on the outside string.

FIG. 4

The top flange is then screwed down the long thread nipple until it contacts the bottom flange. The elevating joint is then removed, the flanges are then bolted together and the packing about the threads inserted which is compressed with the aid of a short collar. This procedure requires special equipment and must necessarily be made to order.

Regan engineers have specialized in control equipment ever since high pressure fields were tapped. Their years of practical knowledge, plus Regan's manufacturing facilities and direct field service, is at your command in an advisory capacity or for actual installation service. Place your obstinate hook-up problems in our hands.

Regan Control Head Bulletin No. 50 will be forwarded upon request.

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REGAN CONTROL EQUIPMENT FOR ALL PRESSURES

Loring Oil Co.'s No. 1 Schuffert, 330 ft. S, 330 ft. W, NE cor. NE SE, Sec. 27-8-12 — 500 ft. oil; W.O.S.R; T.D. 2,450 ft.
Loring Oil Co.'s No. 2 Schull, 957 ft. E, 330 ft. S, NW cor. SW, Sec. 26-8-12 — Bailing to test; T.D. 2,391 ft.
Ohio Oil Co.'s No. 5 Bowman-Hicks, 330 ft. N, 330 ft. E, SW cor., Sec. 33-8-12 — W.O.S.R; 2,684 ft; old T.D. 2,708 ft.
W. D. Perritt et al's No. 1 Elliott, 150 ft. N, 150 ft. E, SW cor. SW SE SW, Sec. 30-8-12 — W.O.S.R; 1,300 ft. oil; T.D. 2,356 ft.
Posey et al's No. 1 Peterson, Blk. 16, Zwolle Townsite, Sec. 31-8-12 — S.D. 250 ft.
Pugh-Hickman Drlg. Co.'s No. 1 Sabine Lbr. Co., 350 ft. N, 350 ft. E, SW cor. NW NE, Sec. 34-8-12 — Derrick.
A. H. Tarver et al's No. 2 Sabine State Bank, 300 ft. N, 300 ft. E, SW cor. NW, Sec. 26-8-12 — Comp. June 1; prod. 45 bbls. 2,327 ft; O.W.D.D; drlg. Aug. 25, 2,370 ft; S.D; W.O. 2,400 ft.
The Texas Co.'s No. 1 Glauque, 1,670 ft. E, 260 ft. N, SW cor., Sec. 27-8-12 — Top marl 2,273 ft; cmtd. 6⅝-in. 2,275 ft; tested dry at 2,422 ft; T.A.
Wheatcroft et al's No. 1 Sabine Lbr. Co., SW NE, Sec. 31-8-12 — S.D. 2,495 ft.

SABINE PARISH—BLUE LAKE

R. L. Gay's No. 8 Bowman-Hicks, Sec. 18-7-13 — Bailing to test; T.D. 2,552 ft.
R. L. Gay, trustee's No. 5 Sabine Lbr. Co., 330 ft. S, 330 ft. W, NE cor. SE NE, Sec. 15-7-14 — Cmtd. 6-in. 2,104 ft; corrected; T.D. 2,116 ft.

UNION PARISH

Industrial Gas Co.'s No. 5 Grayling Lbr. Co., 660 ft. E, 660 ft. S, NW cor. NE, Sec. 28-21-4 — Location.
Industrial Gas Co.'s No. 6 Grayling Lbr. Co., 660 ft. E, 665 ft. N, SW cor. NW, Sec. 33-21-4 — Cmtd. 6-in. 2,050 ft.
Interstate Nat. Gas Co.'s No. 1 J. M. Edwards, 1,980 ft. W, 660 ft. S, NE cor., Sec. 11-21-3 — Began drlg. Sept. 6; cmtd. 12-in. 180 ft.
Nemours Corp.'s No. 2 Hollis, 817 ft. S, 995 ft. W, NE cor. NW, Sec. 11-20-3 — Cmtd. 6-in. 2,080 ft.

WEBSTER PARISH—SAREPTA AND SHONGALOO

Ideal O. & G. Co.'s No. 1 Coyle, 300 ft. N, 300 ft. E, SW cor. SW SE, Sec. 24-23-11 — Derrick.
H. M. Jones Drlg. Co.'s (was E. W. Bateman's) No. 2 Cook, 200 ft. S, 200 ft. W, NE cor. SE NW, Sec. 2-22-11 — 14-ft. sand; W.O.S.R; 2,727 ft.
H. M. Jones Drlg. Co.'s No. 1 Womble, 860 ft. S, 200 ft. E, NW cor. SW, Sec. 1-22-11 — Derrick.
Liggett et al's No. 1 Slack, 720 ft. E, 150 ft. N, SW cor. SE, Sec. 36-23-11 — W.O.S.R; 5-ft. sand; T.D. 2,739 ft.
Liggett et al's No. 2 Slack, 720 ft. E, 150 ft. N, SW cor. SE SE, Sec. 36-23-11 — S.D. 2,618 ft.
Magnolia Pet. Co.'s No. 2 Sally Coyle, 150 ft. N, 150 ft. W, SE cor. SE NE, Sec. 2-22-11 — W.O.S.R. 2,712 ft; 6-ft. sand.
Magnolia Pet. Co.'s No. 2 Gardner, 100 ft. S, 145 ft. W, NE cor. SE NW, Sec. 1-22-11 — Began drlg. Sept. 7; cmtd. 13⅜-in. 296 ft.
Merrick Oil Corp.'s No. 3 Slack, 330 ft. N, 330 ft. W, SE cor. SW SE, Sec. 36-23-11 — Derrick.
Sarepta Oil Co.'s No. 3 Gardner, 396 ft. N, 78 ft. E, SW cor. NW NW, Sec. 6-22-10 — Derrick.
W. O. Neely's No. 1 J. R. Slack, 150 ft. N, 150 ft. E, SW cor., Sec. 12-22-11 — Location.
Sarepta Oil Co.'s No. 2 Gardner, NE SW, Sec. 1-22-11 — Rig up.
Sarepta Oil Co.'s No. 1 Slack, SW cor. NW NE, Sec. 36-23-11 — Rig up.
Southern Prod. Co.'s No. 4 Slack, 600 ft. N, 600 ft. W, SE cor. NW NE, Sec. 1-22-11 — Cmtd. 6-in. 2,735 ft; W.O.S.R; 5-ft. sand; T.D. 2,745 ft.

ARKANSAS
JOHNSON COUNTY

Ark.-La. P. L. Co.'s No. 1 C. H. Harvey, 860 ft. S, 625 ft. E, NW cor. NE SE, Sec. 14-10-24 — Location.
Ark-La. P. L. Co.'s No. 1 Mattie Kelly, 330 ft. S, 657 ft. E, NW cor. SW SW, Sec. 14-10-24 — Began drlg. Sept. 3; drlg. 190 ft.
Conn Grable's No. 1 Hoeing, 720 ft. N, 590 ft. W, SE cor., Sec. 20-9-25 — Drlg. hard sand 2,236 ft.

OUACHITA COUNTY—SMACKOVER

L. H. Hamilton's No. 3 Doyle, 100 ft. E, 400 ft. N, SW cor. SE SE, Sec. 23-15-16 — Derrick.
Wilson & Chapman's No. 1-A Arnold, 330 ft. N, 330 ft. E, SW cor. NE SW, Sec. 24-15-16 — Began drlg. Sept. 3; cmtd. 10-in. 60 ft; drlg. 1,480 ft.

UNION COUNTY—CHAMPAGNOLLE

Ohio Oil Co.'s No. 10 Crain, 330 ft. S, 330 ft. W, NE cor. SE SW, Sec. 1-17-14 — Derrick.
Ohio Oil Co.'s No. 2 R. Furlough, 330 ft. N, 330 ft. E, SW cor. NE, Sec. 12-17-14 — Cmtd. 6⅝-in. 2,965 ft; drlg. 2,984 ft.
Ohio Oil Co.'s No. 4 R. Pumphrey, 330 ft. S, 330 ft. W, NE cor. NE NW, Sec. 12-17-14 — Derrick.

UNION COUNTY—EL DORADO

Malloy & Co.'s No. 7 Burns, SW cor. NW NW, Sec. 31-17-15 — Rig up.
Rice Drlg. Co.'s No. 1 Watley, 150 ft. S, 150 ft. E, NW cor. SW, Sec. 7-17-15 — Reported abd. 92 ft. Apr. 30, 1930; arranging to resume drlg.

EAST TEXAS
HARRISON COUNTY

Calatex O. & G. Co.'s No. 6 Agurs, 755 ft. N, 699 ft. W, Mile Post 27, in J. Womack Sur. — Location.
Shell Rock Pet. Co.'s No. 1 Oliver Dougherty, W. D. Burris Sur. — S.D; brown chalk 3,520 ft.

PANOLA COUNTY

Ark.-La. P. L. Co.'s No. 2-A G. W. Brumble, 477 ft. W, 473 ft. S, NW cor., Jno. Womack Sur., in B. C. Jordan Sur. — Skidded 100 ft. east; rigging up on second hole.
S. E. Bell et al's No. 1 Burnett Lbr. Co., C, S. B. Hendricks Sur. — Cmtd. 8⅝-in. 2,047 ft.
Crichton & Hart's (was W. G. Banks et al's) No. 1 Greeny-Kyle, C Greeny-Kyle 65 ac., Jas. Tippett Sur. — Derrick.
Knox et al's (was Jackson et al's) No. 1 Dunham, 150 ft. W, 150 ft. N, SE cor., M. I. Dunham 29 ac., in Chas. Haley Sur. — S.D; W.O. 2,400 ft.
Nat. Gas Products Co.'s No. 3 Tom Moore, 889 ft. E, 7,928 ft. S, NW cor., B. C. Jordan Sur. — Drlg. 6⅝-in. plug 4,360 ft; cored.
Tex-La. Prod. Co.'s No. 1 O. M. Lawrence, Harrison Davis Sur. — Began drlg. Aug. 27; cmtd. 10-in. 160 ft; drlg. 512 ft.
Doris Thomason's No. 15 Crenshaw, 1,992 ft. S, 2,305 ft. E, SW cor. Jno. Womack Sur. in B. C. Jordan Sur. — Derrick.
Warren & Davis' No. 1 McNeese, 1,671 ft. S, 1,329 ft. E, NW cor., Abe Brooker Sur. — Derrick.

WILDCAT OPERATIONS IN TEXAS PANHANDLE

(Continued from Page 72)

Atlantic Oil Prod. Co.'s No. 1 Reynolds, 330 ft. N and W, NE SE, Sec. 84, Blk. 3, I.&G.N. Sur. — Drlg. 2,608 ft.
British-American Oil Co. and Shell Pet. Corp.'s No. 1 Smith, 330 ft. S and E, NW, Sec. 138, Blk. 3, I.&G.N. Sur. — Location.
British-American Oil Co. and Shell Pet. Corp.'s No. 1 Richardson, 330 ft. N and W, E½, Sec. 127, Blk. 3, I.&G.N. Sur. — Rig.
Beck's No. 1 Sullivan, 330 ft. N and E, W½ NW, Sec. 135, Blk. 3, I.&G.N. Sur. — Spudded and S.D.
Cockrell-McIlroy Oil Co.'s No. 1 Baer, 330 ft. S and W, NE, Sec. 126, Blk. 3, I.&G.N. Sur. — S.D. 3,291 ft; S.O. 3,275 ft; pumped 50 bbls. first 24 hrs; now making 8 bbls.
Cockrell-McIlroy Oil Co.'s No. 1 Jackson, 330 ft. N and E of E 110 ac., SE, Sec. 138, Blk. 3, I.&G.N. Sur. — T.D. 3,215 ft; 1,600 ft. oil in hole; to test.
Cockrell-McIlroy Oil Co.'s No. 1 Harbaugh, 1,263 ft. N, 330 ft. W, Lot 182, Sec. 114, Blk. 3, I.&G.N. Sur. — Location.
Continental Oil Co.'s No. 1 Combs & Worley, 330 ft. S and E, NE, Sec. 38, Blk. 3, I.&G.N. Sur. — T.D. 2,905 ft; T.P. 2,885 ft; to plug back and test.
Continental Oil Co.'s No. 1 Brown, 330 ft. S and W, Sec. 115, Blk. 3, I.&G.N. Sur. — Drlg. 2,910 ft.
Danciger O. & R. Co.'s No. 3 Arnold, 330 ft. N and E, SE, Sec. 149, Blk. 3, I.&G.N. Sur. — Rig.
Danciger O. & R. Co.'s No. 1 McLaughlin, 330 ft S and E, NW, Sec. 33, Blk. B-2, H.&G.N. Sur. — Drlg. 2,691 ft.
Danciger O. & R. Co.'s No. 1 Catlin et al, 175 ft. S, 300 ft. E of N 71 ac. of E 231 ac., Sec. 57, Blk. 3, I.&G.N. Sur. — T.D. 3,120 ft; swbng. 12 to 15 bbls. per day.
Dye & Gillette's No. 1 McConnell, 330 ft. N and W, W½ SE, Sec. 187, Blk. 3, I.&G.N. Sur. — Drlg. 2,985 ft; 16,000,000 ft. gas.
Empire G. & F. Co.'s No. 2-B Archer, 330 ft. S and E, SW, Sec. 139, Blk. 3, I.&G.N. Sur. — Drlg. 145 ft.
Empire G. & F. Co.'s No. 2 Sailor, 330 ft. N and W, NE, Sec. 138, Blk. 3, I.&G.N. Sur. — Drlg. 585 ft.
Dick Graham's No. 1 Sullivan, 792 ft. N and W, Sec. 136, Blk. 3, I.&G.N. Sur. — Drlg. 2,695 ft.
Jean Pet. Co.'s No. 1 Furneaux Bros., 330 ft. N and W cor. SE, Sec. 200, Blk. B-2, H.&G.N. Sur. — S.D. 2,460 ft.
Magnolia Pet. Co.'s No. 1 Cubine, 330 ft. N and W, NE, Sec. 36, Blk. 25, H.&G.N.R.R. Sur. — 9,000,000 ft. gas 2,325-35 ft; S.D. 2,775 ft.
Magnolia Pet. Co.'s No. 1 Sailor, 990 ft. S, 330 ft. W, E½ NE, Sec. 138, Blk. 3, I.&G.N. Sur. — Fishing 2,746 ft.
Magnolia Pet. Co.'s No. 2 Sailor, 330 ft. S and W, E½ NE, Sec. 138, Blk. 3, I.&G.N. Sur. — Cellar.
Midwest Explin. Co.'s No. 1 Cobb, 1,320 ft. W, 400 ft. S, NW, Sec. 165, Blk. 3, I.&G.N. Sur. — Drlg. 3,090 ft.
Mordyan O. & G. Co.'s No. 3 Davis, 330 ft. N and E, S½ NW, Sec. 8, Blk. 1, A.C.H.&B. Sur. — Location.
Nelson et al's No. 1 Crews, 330 ft. S and E, NW, Sec. 12, Blk. 25, H.&G.N. Sur. — 3,500,000 ft. gas 2,295 ft; T.D. 3,263 ft; shot 140 qts. 3,160-3,258 ft; fishing tools 2,620 ft.
Operators R. & P. Co.'s No. 1 Arnold, 330 ft. S and E, E½ NE, Sec. 149, Blk. 3, I.&G.N. Sur. — Drlg. 647 ft.
Prairie O. & G. Co.'s No. 1 Reynolds, 330 ft. S and E, NW, Sec. 84, Blk. 3, I.&G.N. Sur. — Location.
W. A. Scott's No. 1 Cobb, 330 ft. S, 425 ft. W, N½ SE, Sec. 184, Blk. 3, I.&G.N. Sur. — T.D. 2,750 ft; 70,000,000 ft. gas 2,395-2,670 ft.
Shamrock O. & G. Co.'s No. 1 Reynolds, 330 ft. N and E, SE SE, Sec. 84, Blk. 3, I.&G.N. Sur. — Drlg. 1,230 ft.
Skelly Oil Co.'s No. 1 Vicars, 330 ft. N and E, W½, Sec. 127, Blk. 3, I.&G.N. Sur. — Location.
Smith's No. 1 Morse, 200 ft. S, 330 ft. W, Sec. 6, Blk. 26, H.&G.N. Sur. — 3,000,000 ft. gas 2,150-70 ft; S.D. 2,795 ft; 400 ft. oil in hole.
Sullivan et al's No. 1 Morse, 150 ft. W, 330 ft. S, N½ SW, Sec. 16, Blk. A-9, H.&G.N. Sur. — S.D. 2,548 ft; 700 ft. oil in hole; shot with 400 qts; C.O.
Southern Explin. Co.'s No. 2 Vaughn, 330 ft. S and E, SW, Sec. 138, Blk. 3, I.&G.N. Sur. — Drlg. 810 ft.
Tedesco Oil Co. et al's No. 1 Morse, 330 ft. N and W, NE SW, Sec. 1, Blk. 26, H.&G.N. Sur. — S.D. 2,522 ft; C.O.

HUTCHINSON COUNTY

Dixon Creek Oil Co.'s No. 1 Johnson Bros., 330 ft. N and W of E 60 ac. of NW 100 ac., Sec. 1, Blk. X03, H.&O.B. Sur. — Drlg. 975 ft.
Great Plains O. & G. Co.'s No. 1 Sanford, C of S 160 ac. of N 320 ac., Sec. 87, Blk. 46, H.&T.C. Sur. — Drlg. 2,040 ft.
Huber & Co.'s No. 1 Christian, 330 ft. E, 990 ft. N, SW, Sec. 33, Blk. Y, A.&B. Sur. — T.D. 3,023 ft; T.P. 3,006 ft; 900 ft. oil in hole.
Huber Prod. Co.'s No. 1 Johnson Bros., 330 ft. N and E, E½ NW, Sec. 30, Blk. Y, A.&B. Sur. — Drlg. 400 ft.
Huber Prod. Co.'s No. 1 Johnson Bros. (Pure), 330 ft. S and E of E 240 ac., Sec. 29, Blk. Y, A.&B. Sur. — Drlg. 640 ft.
Lanier et al's No. 1 Johnson Bros., 990 ft. S, 330 ft. E, W½ SE, Sec. 29, Blk. Y, A.&B. Sur. — Location.
Phillips Pet. Co.'s No. 1-A Pease, 330 ft. S, 380 ft. E, Sec. 9½, Z. C. Collier Sur. — Spudding.
Phillips Pet. Co.'s No. 1 Herring, 330 ft. N and E, W½, Sec. 7, Blk. X02, H.&O.B. Sur. — Drlg. 2,912 ft.
Prairie O. & G. Co.'s No. 1 Read, C SW, J. M. McDonald Sur. — Rig.
Sinclair O. & G. Co.'s No. 1 Johnson Bros., 330 ft. N and E, NW, Sec. 32, Blk. Y, A.&B. Sur. — S.O. 2,230-54 ft; S.D. 2,905 ft; 39,000,000 ft. gas 2,340 ft.
Sinclair O. & G. Co.'s No. 1-C Johnson Bros., 330 ft. N and W, NE, Sec. 32, Blk. Y, A.&B. Sur. — Drlg. 735 ft.
Skelly Oil Co.'s No. 1 Johnson Bros., 660 ft. S and W, SE, Sec. 30, Blk. Y, A.&B. Sur. — S.O. 3,065 ft. and 3,108-10 ft; S.D. 3,110 ft.
Spurlock et al's No. 1-A Christian, 440 ft. S, 330 ft. W, NE cor. SE SE, Sec. 33, Blk. Y — 60,000,000 ft. gas; S.D. 3,219 ft; shot 140 qts. 3,150-3,220 ft; C.O.
Stansylvanian Oil Co.'s No. 1 Whittenburg, 330 ft. S and W, Sec. 129, Blk. Z, E.L.&R.R. Sur. — Drlg. 2,650 ft.

LIPSCOMB COUNTY

Brown et al's No. 1 Box T Ranch, SW NE, Sec. 612, H.&T.C. Sur. — S.O. 3,760 ft; S.D. 4,142 ft.
Okla. Public Service Co.'s No. 1 C. W. Jones, NE SW, Sec. 100, H.&T.C. Sur. — Lowering 5 3/16-in. csg; T.D. 5,003 ft.

LUBBOCK COUNTY

Center Oil Co.'s No. 1 Bowles Ranch — Small S.O. 1,133-40 ft; S.D. 4,167 ft.

MOORE COUNTY

Dana O. & G. Co.'s No. 1 R. Vtey, 330 ft. N, 330 ft. E, W½ SE, Sec. 135, T.&N.O. Sur. — Location
L. D. Gaunt's No. 1 W. H. Reeler, 330 ft. N, 330 ft. E, N½ E½ NE, Sec. 191, T.&N.O. Sur. — Rig
Sunray Oil Co.'s No. 1 C. R. Jones, 330 ft. E, 330 ft. S, W½ SW, Sec. 164, T.&N.O. Sur. — Rig.
Shamrock O. & G. Co.'s No. 1 Coffee, 330 ft. E, 330 ft. N, E 160-ac. tr., Sec. 355, H.&T.C. Sur. — Drlg. 400 ft.
Delmar Oil Co.'s No. 1 Jones, 990 ft. E, 330 ft. N, NW, Sec. 171, Blk. 3-T, T.&N.O. Sur. — Rig; 3,010 ft.
Gulf Prod. Co.'s No. 1 Kilgore, C SW, Sec. 22, Blk. P.Mc., E.L.R.R. Sur. — Gas estimated 15,000,000 ft. 3,050-60 ft; T.D. 3,645 ft; to complete as gasser.
Texas Interstate P. L. Co.'s No. 1 Sneed, Jr., C NE, Sec. 48, Blk. 6-T, T.&N.O. Sur. — Location.

MOTLEY COUNTY

Matador Oil Corp.'s No. 1 Owens, C NE, Sec. 10, Blk. G, B.&B. Sur. — S.D. 580 ft.

OLDHAM COUNTY

Chambers et al's No. 1 Herring, CNL, Sec. 29, Blk. S, G.C.&S.F. Sur. — Spudded and S.D.

POTTER COUNTY

Canadian River Gas Co.'s No. 1 McBride estate "A," 4,950 ft. S, 330 ft. W, E½ S½, Sec. 98, Blk. 46, H.&T.C. Sur. — S.D. 2,000 ft.

RANDALL COUNTY

W. A. Patterson's No. 1 Palo Duro, Sec. 60, Blk. K-14 ... S.D. 1,250 ft.

ROBERTS COUNTY

Big Bend Oil Co.'s No. 1 Ledrick, Sec. 7, Blk. A-5 ... Shot 10 qts. 5,270-93 ft; S.O. 5,283 ft; S.D. 5,992 ft.

WHEELER COUNTY

Davis et al's No. 1 Stuckey, C NE SW, Sec. 92, Blk. 17, H.&G.N. Sur. ... Drlg. 1,760 ft.

Magnolia Pet. Co.'s No. 2 Worley, 330 ft. N and W, NE, Sec. 29, Blk. 24, H.&G.N. Sur. ... Fishing 1,530 ft.

McGee et al's No. 1 Jolly, C NE, Sec. 15, Blk. A-8, H. &G.N. Sur. ... T.D. 2,030 ft.

Lone Star Gas Co.'s No. 2 Brown, 1,980 ft. N and E, Sec. 53, Blk. 23, H.&G.N. Sur. ... Drlg. 1,490 ft.

Lone Star Gas Co.'s No. 1 Purcell, 1,980 ft. S, 660 ft. E, Sec. 51, Blk. 17, H.&G.N. Sur. ... Drlg. 120 ft.

Murchison & Fain's No. 1 Harvey, 1,980 ft. S and E, Sec. 56, Blk. 23, H.&G.N. Sur. ... Drlg. 1,190 ft.

Murchison & Fain's No. 1 Hanes, C NW NW, Sec. 31, Blk. 17, H.&G.N. Sur. ... S.D. 1,575 ft.

Murchison & Fain's No. 1 Brown, 200 ft. S, 250 ft. E, NE, Sec. 53, Blk. 23, H.&G.N. Sur. ... Derrick.

Wischkamper et al's No. 1 Kiser, 330 ft. N and E of SW, Sec. 33, Blk. 17, H.&G.N. Sur. ... S.D. 2,040 ft.

Woodley et al's No. 1 Sloss & Admire, 660 ft. N, 330 ft. E, Sec. 47, Blk. 13, H.&G.N. Sur. ... Drlg. 1,325 ft.

Vollmert's No. 1 Porter, 330 ft. S and E, NE, Sec. 15, Blk. 27, H.&G.N. Sur. ... S.D.

WILDCAT OPERATIONS IN WEST TEXAS

(Continued from Page 71)

Kornrumpf et al's No. 1 Garren, 330 ft. S and W, Sec. 15, Blk. 79, Public School Land ... Shut down 960 ft.

ECTOR COUNTY

C. P. Davis et al's No. 1 Hendricks, C SW, Sec. 46, Blk. 42, Twp. 2s, T.&P.R.R. Sur. ... Shut down 4,012 ft.; moving in new engine.

Independent Oil & Gas Co.'s No. 1 Eidson, 1,250 ft. S and 2,144 ft. E of NW cor., Sec. 6, Blk. 44, Twp. 3s, T.&P. Sur. ... Shut down 3,800 ft.; 1,000 ft. oil in hole.

H. F. Wurtz' No. 1 E. A. Ibbetson et al, 330 ft. from N and E lines of NW, Sec. 16, Blk. 46, Twp. 3s, G.M.M.Br.&A. Sur. ... Shut down 2,375 ft.

T.P. Coal & Oil Co.'s No. 1 McKenzie, 1,650 ft. from S and 330 ft. from E of Sec. 282, Blk. 45, Twp. 2s, T.&P. Sur. ... Total depth 3,870 ft.; plugged back to 3,775 ft.; shut down.

R. R. Penn et al's No. 1 Goodman et al, 2,640 ft. N and 330 ft. W of SE cor., Sec. 27, Blk. 44, T.&P.R.R. Sur. ... Shut down 4,398 ft.; show oil 4,043 and 4,120-30 ft.

Simms Oil Co. et al's No. 4 University, 1,650 ft. from S and 1,320 ft. from E of Sec. 1, Blk. 35 ... Drlg. 1,200 ft.

Skelly Oil Co. and Republic Prod. Co.'s No. 1 McKenzie, 990 ft. from S line and 330 ft. from E line of Sec. 28, Blk. 45, Twp. 2s, T.&P. Sur. ... Shut down 3,750 ft.; flowed 110 bbls. on July 12; shut in for storage.

EL PASO COUNTY

Lane-The Texas Company's No. 1 Malone, 2,110 ft. from SW and NW of Section 46, J. M. Day Sur. ... Shut down 3,089 ft.

FISHER COUNTY

Cranfill & Reynolds' No. 2 Flannigan, 330 ft. from S and E of W half of Sec. 200, B.B.B.&C.R.R. Sur. ... 2,500 ft. oil in hole from 3,090-95 ft. shut down 3,130 ft.; plugged back to 3,124 ft.; no results from 10-qt. shot.

Cranfill & Reynolds' No. 3 Willingham, 330 ft. from S and E of Sec. 207, B.B.B.&C. Sur. ... Drlg. 1,320 ft.

GARZA COUNTY

Pandem Oil Corp.'s No. 1 Justice, 330 ft. from S and W of Sec. 12, Blk. 4, H.&G.N. Sur. ... Spudded and shut down.

GLASSCOCK COUNTY

Timberlake & Snyder's No. 1 Meek, 2,310 ft. W and 1,600 ft. N of SE cor., Sec. 7, Blk. 34, Twp. 3s, T.&P. Sur. ... Total depth 2,956 ft.; shut down.

World Oil Co.'s No. 3-C McDowell, 2,310 ft. from S and W of NE cor., Sec. 21, Blk. 34, Twp. 2s, T.&P. Sur. ... Shut down 660 ft.; running 15½-in. casing.

HOWARD COUNTY

Cosden Oil Co.'s No. 6 Roberts-A, 200 ft. N and E of SW cor., Sec. 129, Blk. 29, W.&N.W.R.R. Sur. ... Sulphur water 1,433-46 ft.; shut down 1,456 ft.

G. F. Getty's No. 1 Snyder, Sec. 27, Blk. 10, Twp. 1s, SW cor. of NE of NE ... Location.

Greene O. & R. Co. et al's No. 1 Denman, 330 ft. from N and W of E half of NE, Sec. 14, Blk. 30, Twp. 1s, T.&P. Sur. ... Moving in Star machine; total depth 1,980 ft.

Merriwether's No. 1 Smith, 150 ft. from S, 2,490 ft. from W, Sec. 45, Blk. 33 ... 2,000 ft. water in hole; shut down 3,270 ft.; 2,000 ft. sulphur water in hole; will abandon.

Moody Oil Corp.'s No. 23-B Roberts, 990 ft. from N and W of Sec. 137, Blk. 29 ... Shut down 261 ft.

HUDSPETH COUNTY

Theison's No. 1 University, 2,050 ft. from S and 2,225 ft. from E of Sec. 17, Blk. E ... Spudded 35 ft. and shut down.

Western States Oil Co.'s No. 1 Gardner & Moseley, NE NW, Sec. 12, Blk. 18 ... Shut down 3,155 ft.

Williams & Williams Drlg. Co.'s No. 1 Noelke, 200 ft. from N and 1,020 ft. from E of Sec. 8, City of San Antonio Sur. ... Machine.

IRION COUNTY

Bristow et al's No. 1 Nutt, 180 ft. from NW of SW of NW, Sec. 6, Gonzales Co. School Lands ... Shut down 1,449 ft.

Crawford Oil Co.'s No. 1 Williams, 450 ft. from N, 150 ft. from W, Subd. 8 ... Shut down 1,105 ft.

Cromwell et al's No. 1 Tankersley, 150 ft. from N and 210 ft. from W of E half of Sec. 1,320, G.C.&S.F. Sur. ... Shut down 1,712 ft.; show oil 1,621-25 ft.

Straughn & Texannati Oil Co.'s No. 1 Tankersley, 150 ft. from S and 750 ft. from W of Sec. 4, Gonzales Co. School Lands ... Spudding.

P. H. Williams' No. 1 Ash, C of Sec. 20, Washington County ... Show oil 7,931 ft.; shut down 8,-890 ft.; may drill deeper.

Webb et al's No. 1 Nutt, 150 ft. from S and 116 ft. from W of Blk. 5, Gonzales Co. School Land ... Location.

F. F. Webb's No. 1 W. H. Williams, 200 ft. from E and 750 ft. from S line SW of NE Sec. 10, Gonzales Co. School Land ... Shut down 100 ft.

JONES COUNTY

Gibson & Johnson's No. 1 Hudspeth, 1,125 ft. from N and 483 ft. from E of Sec. 22, Edward Miles Sur. ... 600 ft. oil and water in hole; top pay 2,542 ft.; underreaming 5 3/16-in. casing; total depth 2,806 ft.

Pope et al's No. 1 Swann, 2,023 ft. from S and 400 ft. from E of I. Miley Sur. No. 281 ... Drlg. 785 ft.

LOVING COUNTY

Arkansas Fuel Oil Co.'s No. 1 Dean, 990 ft. from NE and 2,310 ft. from SE Sec. 84, Blk. 1, W.&N.W. Sur. ... Building rig.

Eppenauer et al's No. 1 Allen, 2,310 ft. from NE and NW lines, Sec. 90, Blk. 1, W.&N.W. Sur. ... Hole junked; skidding 20 ft. northwest.

Lockhart & Co.'s No. 3 Bowen & Wells, 330 ft. from NE and SE of Sec. 92, Blk. 1, W.&N.W. Sur. ... Shut down 3,383 ft.

Hadlock et al's No. 2 Russell, 1,650 ft. SW of NE line, 2,310 ft. NW of SE line, Sec. 80, Blk. 1, W.&N.W. R.R. Sur. ... Pulled tubing; shot 240 qts. from 4,250-4,300 ft.; swabbing 12 bbls. oil and 6 bbls. salt water per day; total depth 4,360 ft.

Henshaw et al's No. 1 Reagan & McElvain, 990 ft. from SE and 330 ft. from SW, Sec. 34, Blk. 1, W.&N.W. Sur. ... Drlg. 3,450 ft.

Lockhart & Co.'s No. 2 fee, 676 ft. S, 330 ft. W, Sec. 91, Blk. 1, W.&N.W. Sur. ... Spudded 140 ft.; shut down.

Lockhart & Co.'s No. 3 Hubbard, 1,650 ft. from NE line, 330 ft. NW line of Sec. 83, Blk. 33, H.&T.C.R.R. Sur. ... Rigged up and shut down.

Miller et al's No. 1 Chapman, 225 ft. from NW and 285 ft. from SW line, Sec. 71, Blk. 1, W.&N.W. Sur. ... Drlg. 2,915 ft.

Rush et al's No. 1 Wheat, 1,650 ft. from NW and 330 ft. from SW of Sec. 35, Blk. 1, W.&N.W. Sur. ... Drlg. 4,100 ft.

California Co.'s No. 4 Reagan & McElvain, 330 ft. from NE and 1,650 ft. from NW, Sec. 34, Blk. 1, W.&N.W. ... Drlg. 3,700 ft.

Lee O. White et al's No. 1 Russell et al, 320 ft. from NW and 3,200 ft. from SW, Sec. 80, Blk. 1, W.&N.W. ... Drlg. 3,600 ft.

MENARD COUNTY

Barnett et al's No. 3 Callan City Co., 300 ft. from S and W, Sec. 1, B.S.&F. Sur. ... Show oil 709-11 ft.; shut down 1,270 ft.

Barnett et al's No. 4 Callan City Co., 1,200 ft. from S and 2,200 ft. from W, Sec. 1, B.S.&F. ... Machine.

Panhandle Ref. Co.'s No. 2 Eckhart, 1,320 ft. from W and 1,320 ft. from S of Sec. 10, Blk. 2, T.W.N.G. Sur. ... 500,000 ft. gas with show oil 2,945 ft.; shut down 3,200 ft.; to plug back to 2,955 ft. to save gas.

Priest's No. 1 Sorrell, 1,000 ft. from E and 200 ft. from S cor., Sec. 132, E.L.R.R. Sur. ... Drlg. by tools 2,450 ft.

MIDLAND COUNTY

Kerwin et al's No. 1 Mathen, 2,310 ft. from N and 335 ft. from W line Sec. 40, W. L. Gray Sur. ... Spudded and shut down.

MITCHELL COUNTY

Morrison et al's No. 2 Morrison, 2,390 ft. from N and 660 ft. from E of Sec. 31, Blk. 28, Twp. 1n, T.&P. R.R. Sur. ... Total depth 3,112 ft.; top pay 3,038 ft.; 1,000 ft. oil in hole, swabbing 40 bbls. in 24 hrs.

Morrison et al's No. 1 Poe et al, 660 ft. S and 1,980 ft. W parallel to section lines of NE cor., Sec. 8, Blk. 27, T.&P. Sur. ... Spudded 10 ft. and shut down.

PECOS COUNTY

Barnes et al's No. 1 Sanford, 160 ft. from NW and 157 ft. from SW of Sec. 55, Blk. 10, H.&G.N. Sur. ... Set casing 1,257 ft.

Curry & Eakin's No. 1 Pecos Valley Oil Co., 1,050 ft. from SE and 1,470 ft. from SW, Sec. 36, Blk. 3, H.&T.C. Sur. ... Drlg. 1,597 ft.

Dittman's No. 1 Jackson, 2,310 ft. from NE and 330 ft. from NW, Sec. 28, Blk. 3, H.&T.C. ... Location.

Dittman's No. 1 Eaton, 2,310 ft. from SW and NW, Sec. 35, Blk. 3, H.&T.C. ... Spudded and shut down.

Dittman's No. 2 Eaton, 990 ft. from SW and 330 ft. from SE, Sec. 35, Blk. 3, H.&T.C. ... Location.

Dittman's No. 1 Eaton, 330 ft. from NE and SE, Sec. 37, Blk. 3, H.&T.C. ... Location.

G. A. Henshaw, Jr., Inc., No. 1 University, 1,650 ft. from S and 990 ft. from E, Sec. 32, Blk. 16 ... Plugged back from 1,678 ft. to 1,673 ft.; top pay 1,670 ft.; shot 10 qts. 1,668-73 ft.; 1,400 ft. fluid in hole.

Humble Oil & Ref. Co.'s No. 1 Kokernot, 1,320 ft. from N line and 1,467 ft. from W line of Sec. 227, Blk. 10, G.H.&S.A. Sur. ... Drlg. 4,153 ft.

Humble Oil & Ref. Co.'s No. 1-B Thoman, 1,608 ft. from N and 4,062 ft. from E of Sec. 98, Blk. OW, G.C.&S.F. Sur. ... Shut down 1,310 ft.; flowing sulphur water.

Independent O. & G. Co.'s No. 4 McDonald, 115 ft. from N and 2,485 ft. from E, Sec. 46, Blk. 12, H.&G.N. ... Shut down 2,190 ft.

Lockhart & Co.'s No. 1 University, C NE of SW Sec. 24, Blk. 16 ... Location.

Magnolia Pet. Co.'s No. 1 Byrne, 2,490 ft. from SE and SW, Sec. 54, Blk. 10, H.&G.N. Sur. ... Drlg. 1,005 ft.

McCurdy & Brown's No. 2 Tippett, 150 ft. from N and W of SE, Sec. 40, Blk. 194, G.C.&S.F. ... Location.

Messenger et al's No. 2 Byrne, 2,490 ft. from NE and SE of Sec. 54, Blk. 10, H.&G.N. Sur. ... Shut down 1,367 ft.; top pay 1,564 ft.; flowed 93 bbls. per day.

Messenger et al's No. 1 Butz, 1,830 ft. from NW and 1,170 ft. from SW, Sec. 54, Blk. 10, H.&G.N. Sur. ... Shut down 740 ft.

J. R. Miller et al's No. 1 Bennett, 359 ft. W of CWL, Sec. 1, Blk. 119, G.C.&S.F. ... Shut down 1,700 ft.

J. D. O'Mara's No. 1 Bennett, Sec. 593, 1,460 ft. from S, 150 ft. from E, G.C.&S.F. ... Total depth 1,230 ft.; top pay 1,089 ft.; plugged back to 1,18[illegible] ft.; will drill deeper.

J. D. O'Mara's No. 1 Streety, S of Sec. 1, W. P. Howard Sur. ... Underreaming 2,200 ft.

Oregon Oil Corp.'s No. 2 Yates, 150 ft. from S and W of Sec. 58, Blk. 1, I.&G.N. Sur. ... Shut down 2,440 ft.

Perren Oil Co.'s No. 2 Eaton, C of E of W, Sec. 27, Blk. 3, H.&T.C. Sur. ... Drlg. 1,660 ft.

Plymouth Oil Co.'s No. 1 Perry, 330 ft. from N and W Sec. 13, Blk. 194, G.C.&S.F. ... Total depth 1,920 ft.; top pay 1,892 ft.; flowing 25 bbls. per day.

Plymouth Oil Co.'s No. 4 Perry, 600 ft. from N and 420 ft. from E, Sec. 14, Blk. 194, G.C.&S.F. Sur. ... Drlg. 850 ft.

R. W. Porpus et al's No. 1 State Land, 330 ft. S and W lines of NE, Sec. 28, Blk. OW, T.C.R.R. Sur. ... Spudded and shut down.

Pure Oil Co.'s No. 1 Harrison, 2,310 ft. from N and 330 ft. from W of Sec. 203, Blk. 3, T.&P. Sur. ... Drlg. 2,037 ft.

Riser & White's No. 1 Riser, 2,297 ft. from S and 997 ft. from E of Sec. 24, Blk. 12, H.&G.N. Sur. ... Shut down 405 ft.

Sides & Cloyd's No. 2 Blackstone & Slaughter, C NW of Sec. 34, Blk. A-2, T.&C.R.R. Sur. ... Drlg. 2,330 ft.

California Co.'s No. 1 Fromme, 330 ft. from NE and NW, Sec. 106, Blk. 10, H.&G.N. Sur. ... Shut down 1,650 ft.

California Co. et al's No. 1 Thomas, 990 ft. from NW and SW, Sec. 31, Blk. 34, H.&T.C. Sur. ... Location.

The Texas Company's No. 1 Wright, 660 ft. S and E of NW cor., Sec. 9, Blk. 131, T.&St.L. Sur. ... Shut down 3,504 ft.

Warner's No. 1 Webb, 2,550 ft. from NW and 6,100 ft. from NE of Sec. 311, Abst. 756, C. McGinley Sur. ... Shut down 680 ft.

Williams & Moran's No. 1 Heiner estate, 450 ft. from N and 2,490 ft. from W of Sec. 590, G.C.&S.F. Sur. ... Rig up.

PRESIDIO COUNTY

L. C. Brite's No. 4 Brite, 271 ft. from N and 1,188 ft. from E lines of Sec. 245, Blk. 4 ... Shut down 2,630 ft.

REAGAN COUNTY

Big Lake Oil Co.'s No. 4-C University, 1,120 ft. from N and 1,096 ft. from E of Sec. 1, Blk. 2 ... Fishing 8,220 ft.; well killed; top pay 8,220 ft.

Big Lake Oil Co.'s No. 5-C University, 625 ft. from S and 200 ft. from W of Sec. 25, Blk. 9 ... Total depth 3,030 ft.; cem. casing.

Texon O. & L. Co.'s No. 4-B University, 1,130 ft. from N and W of Sec. 26, Blk. 9 ... Drlg. 968 ft.

REEVES COUNTY

H. T. Hansford's No. 1 Williams, 150 ft. from S and W Sec. 17, Blk. 6, H.&G.N. Sur. ..... Shut down 380 ft.

Black & Fink's No. 1 Brooks, 1,980 ft. N and 660 ft. W Sec. 16, Blk. 50 ..... Shut down 1,860 ft.; show oil 1,820 ft.; cleaning out after two shots; filled up 200 ft. with oil.

Riggs & Smith's No. 1 Lee Monroe, 2,390 ft. from NE and 330 ft. from NW line, Sec. 34, Blk. 7, H.&L.N. Sur. ..... Spudded and shut down 85 ft.

Salsbury & Gregory's No. 1 Young Bell, 1,170 ft. from N and 330 ft. from E of Sec. 7, Blk. 5, H.&G.N. ..... Shut down 370 ft.

Lee O. White et al's No. 1 Hershersor, 330 ft. from N and W lines of Sec. 5, Blk. 51, Twp. 10, T.&P. Sur.... Shut down 4,415 ft.

California Co.'s No. 1 Kloh & Rumsey, 1,650 ft. from S and E of Sec. 13, Blk. 54, Twp. 4, T.&P. Sur. ..... Drlg. 3,604 ft.; show oil and gas 3,580-90 ft.

RUNNELS COUNTY

Dutton et al's No. 1 Dean, 5,475 ft. from NE and 1,048 ft. from NW in J. Heil Sur. No. 419 ..... Show oil 2,308-95 ft.; gas pocket 2,303 ft.

George W. Boyce's No. 1 Lang, 2,310 ft. N, 6,900 ft. E, Sec. 262 ..... Show oil 2,028 ft.; shut down 2,643 ft.

SCHLEICHER COUNTY

Delmar Oil Co.'s No. 1 O'Harrow, C of NW Sec. 56, Blk. 1, G.H.&S.A.R.R. Sur. ..... Drlg. 5,100 ft.

Interstate's No. 1 Whitten, 1,320 ft. from N and W, Sec. 35, Blk. LL, T.C.R.R. Sur. ..... Plugging back to shoot oil and gas show at 4,915-25 ft.; total depth 6,880 ft.

Teas & Gant's No. 1 Allison, 1,320 ft. N and E of SW cor. of Sec. 37, Blk. K, G.H.&S.A.R.R. Sur. ..... Cleaning out 3,550 ft.

Wesner et al's No. 1 Nicks, 2,310 ft. from N and 2,362 ft. from E of Sec. 77, Blk. LL, T.C.R.R. Sur. ..... Shut down 750 ft.

Westyde et al's No. 1 Meador, 1,320 ft. from S and E of Sec. 661, G.C.&S.F. Sur. ..... Location.

George Wilson's No. 1 Page, Sec. 40, Blk. L, 1,290 ft. from N, 1,470 ft. from W, G.H.&S.A.R.R. Sur. ..... Shut down 5,027 ft.

SCURRY COUNTY

Byrd & Harmon's No. 1 Muruhy, Jr., 320 ft. from N and E of Sec. 114, Blk. 97, H.&T.C. Sur. ..... Top pay 1,750 ft.; shot 180 qts. 2,300-50 ft.; hole caving; total depth 3,501 ft.

Camp Spring Oil & Ref. Co.'s No. 3 Guinn, 1,300 ft. from S, 300 ft. from E, Sec. 12, Blk. 3, H.&T.C.R.R. Sur. ..... Plugging 4,373 ft.

Camp Spring Oil Co.'s No. 1 Strayhorn, 330 ft. from S and 1,980 ft. from W of Sec. 154, Blk. 3, H.&G.N... Underreaming 750 ft.

I. B. Mimms et al's No. 1 J. J. Koonsman, Sec. 216, Blk. 2, H.&T.C.R.R. Sur. ..... Spudded and shut down.

G. E. Dickman and R. B. Pender et al's No. 1 F. C. Davis, 1,000 ft. N and 1,770 ft. W of SE cor. of Sec. 275, Blk. 2, H.&T.C. Sur. ..... Cleaning out 4,970 ft.

Seifert & Dibble's No. 1 T. M. Blackburn, 2,310 ft. from N and 2,310 ft. from W line of Sec. 155, Blk. 97, H.&T.C. Sur. ..... Cellar.

Transcontinental Oil Co.'s No. 1 Peckham, 330 ft. from S and W of R. N. Miller Sur. ..... Setting casing 3,946 ft.

STERLING COUNTY

Beesley et al's No. 1 Brown, 2,940 ft. N and 300 ft. W of SW cor. Sec. 7, Blk. 22, H.&T.C., but in Sec. 16, Blk. 21, Twp. 4s, T.&P. ..... Spudded.

SUTTON COUNTY

Independent Oil & Gas Co.'s No. 1 Wilson, Sec. 30, Blk. A, 1,650 ft. from N, 2,310 ft. from W ..... Location.

TAYLOR COUNTY

Adams et al's No. 2 Lowe, 150 ft. from N and 750 ft. from W Sec. 19, Guadalupe County School Lands ... Location.

Clark et al's No. 1 Kendall, 250 ft. from N and W of farm in Willis Avery Sur. ..... Drlg. 2,325 ft.

Eastland Oil Co.'s No. 1 Hunter, 1,574 ft. from E and 3,418 ft. from S of William R. Ellis Sur. ..... Swabbed 188 bbls. oil in 24 hrs.; top pay 2,380 ft.; total depth 2,407 ft.; plugged back to produce from pay at 2,380-89 ft.

Gibson & Johnson's No. 1 Bingham, 330 ft. N and E of SW cor. their 270.8-acre tract, Sec. 31, Guadalupe County School Land ..... Shut down 2,501 ft.

John B. Jameson's No. 1 Webb, 1,170 ft. S and W of NE cor., Sec. 46, Lunatic Asylum Land ..... Show oil 4,917 ft.; shut down 6,160 ft.

Hucony Oil Co. et al's No. 1 Richie, C SE Sec. 10, Blk. A, S.P.R.R. Sur. ..... Shut down 2,230 ft.

Sanger et al's No. 1 City of Abilene, 830 ft. from S and 1,400 ft. from E of Sec. 66, Blind Asylum Lands ..... Shut down.

Sanger O. & R. Co.'s No. 1 Osborn, 330 ft. from SW of SE, Sec. 68, Blind Asylum Lands ..... Rig.

TERRELL COUNTY

Big Bend Oil Co.'s No. 1 Bassett, C NW, Sec. 155, Blk. D, M.-K.-T.R.R. Sur. ..... Shut down 2,180 ft.

Keck Pecos Trust Co.'s No. 1 Hamilton, C Sec. 6, Georgetown Ry. Sur. ..... Shut down 3,150 ft.

Miller Bros.' No. 1 Allison & Burke, C NW cor. Sec. 10, Blk. 176, T.&P. Sur. ..... Shut down 120 ft.

Mrs. J. B. McPhees' No. 1 Sam Belt, C Sec. 16, Blk. D-7, E.L.R.R. Sur. ..... Shut down 880 ft.; moved off machine.

Transcontinental Oil Co.'s No. 1 Goode, 2,152 ft. from E and 330 ft. from S, Sec. 26, Blk. 161, G.C.&S.F.R.R. Sur. ..... Fishing 5,229 ft.

Woodley & Jones' No. 1 Pankenham, C SE NW, Sec. 43, Blk. B-2, C.C.S.D.&N.G.R.R. Sur. ..... Shut down 640 ft.

TOM GREEN COUNTY

Belding & Dutton's No. 1 Nosworthy, 2,640 ft. from S and 587 ft. from E of John McNeese Sur. ..... Cleaning out 435 ft.

Cowden Oil Co.'s No. 1 William Anson, 2,310 ft. S, 330 ft. W of NE cor., Sec. 20, Blk. 24, H.&T.C.R.R. Sur. .... Location.

Fitzgerald & Taliaferro's No. 1 Bennett, C SW Sec. 1,628, E. H. Dinger Sur. ..... Plugged back to 2,405 ft. to straighten hole; shut down 2,447 ft.

Mintex Oil Co.'s No. 1 Campbell Est., 446 ft. from S and 630 ft. from W of Sec. 180, Dist. No. 11, S.P.R.R. Sur. ..... Shut down 1,507 ft.

Phillips Pet. Corp.'s No. 1 Gulden, 1,250 ft. from N and 1,583 ft W of Sec. 77, James Webb Sur. ..... Drlg. 3,525 ft.; half full salt water.

E. W. Wiley et al's No. 1 Maier, 200 ft. from E, 110 ft. from N, Sec. 6, Blind Asylum Land ..... Shut down 815 ft.

UPTON COUNTY

Cordova Union Land Co.'s No. 1 fee, 330 ft. from S and E line of Sec. 1, Blk. 1, M.-K.-T.R.R. Sur. ..... Location.

Gulf Prod. Co.'s No. 1 King Ranch Oil & Lignite Co., 330 ft. from S and 990 ft. from W line Sec. 28, Blk. 2, M.-K.-T. Sur. ..... Location.

Penn & Shell Pet. Corp.'s No. 1 Anderson, 1,320 ft. from S and E Sec. 37, Blk. Y, C.C.S.D.&R.G.N.G. ..... Rig up.

VAL VERDE COUNTY

Independent Operators' No. 1 Whitehead, SE SE, Sec. 30, Blk. 4, I.&G.N. Sur., elev. 1,175 ft. ..... Shut down 5,360 ft.

O. O. Owen's No. 1 Mills, Sec. 128, Blk. 1, I.&G.N. Sur., elev. 2,130 ft. ..... Shut down 6,760 ft.

Phantom Oil Co.'s No. 1 Ingram, 175 ft. W of E line and 300 ft. N of S line, Sec. 33, Blk. D-8, E.L.&R.R. Sur... Show oil 1,525 ft.; fishing 3,035 ft.; may skid over and start new hole.

Valvert Oil Corp.'s No. 1 Bassett, C NE, Sec. 47, Blk. Y. Shut down 4,009 ft.

WARD COUNTY

Atlantic Oil Prod. Co.'s No. 1 Reynolds & Miller, 330 ft. from NE and NW Sec. 15, Blk. 32, H.&T.C. ..... Drlg. 2,440 ft.

Bradford et al's No. 1 Murry, 1,782 ft. from NW and 2,157 ft. from SW, Sec. 11, Blk. 5, H.&T.C. Sur. ..... Total depth 2,212 ft.; top pay 2,130 ft.; pumped 60 bbls. oil and 15 bbls. water from 2,197 ft.

Gulf Prod. Co.'s No. 5 Hutchings, 330 ft. from S and W Sec. 3, Blk. F, G.&M.M.B.&A. Sur. ..... Shut down 2,560 ft.; shows oil 2,515 ft., 2,555-60 ft.; total depth 2,506 ft.; produced 67 bbls. in 18 hrs.

Gulf Prod. Co.'s No. 3 Wristen Bros., 220 ft. NE of SW and 220 ft. SE of NW Sec. 18, Blk. 5, H.&T.C. Sur.... Show gas 1,960-70 ft.; filling up with sulphur water 2,520-77 ft.; salt water 2,545 ft.; plugged back to 2,477 ft.

Gulf Production Co.'s No. 13 O'Brien, 330 ft. from S and 2,310 ft. from W Sec. 6, Blk. F, G.M.M.B.&A. ... Drlg. 2,315 ft.

Gulf Production Co.'s No. 14 O'Brien, 330 ft. from S and E, Sec. 15, Blk. F ..... Drlg. 2,414 ft.

Magnolia Pet. Co.'s No. 1 Sealy, 330 ft. from S and E of NE cor., Sec. 46, Blk. 2, G.M.M.B.&A. Sur. ..... Drlg. 1,595 ft.

R. F. Owens' No. 1 Johnson, 100 ft. from NE and 1,100 ft. from SE of Sec. 8, Blk. 33, H.&T.C.R.R. Sur ..... Shut down 1,200 ft.

Penn and Atlantic's No. 1-B Pecos Mercantile Co., 990 ft. from NW and 2,310 ft. from NE, Sec. 16, Blk. 34, H.&T.C. Sur. ..... Shut down 2,607 ft.; flowing 10 bbls. oil and 5 bbls. water per day.

Richardson et al's No. 4 O'Brien et al, 330 ft. from N and 2,340 ft. from W, Sec. 5, Blk. F, G.M.M.B.&A.... Drlg. 2,658 ft.

Tex-Oil Prod. Co.'s No. 1 Redman, 1,980 ft. NE of SW line and 1,980 ft. SE of NW line, Sec. 152, Blk. 34, H.&T.C.R.R. Sur. ..... Shut down 5,077 ft.; show oil 5,070 ft.; shot 140 qts. from 5,047-77 ft.; no results.

Shipley et al's No. 5 Hayzlett, assume common line Secs. 16 and 17 is N and S, 220 ft. S and 1,910 ft. W, Sec. 17, Blk. 5 ..... Standard rig.

Shipley et al's No. 1 Monroe, 330 ft. SE SW Sec. 3, Blk. 1 ..... Shut down 2,520 ft.

T. P. Coal & Oil Co.'s No. 1 Barker, 330 ft. from SW and NW of Sec. 27, Blk. B-29, Public School Land ..... Drlg. 705 ft.

WINKLER COUNTY

Atlantic & Maxwell's No. 1 Daugherty, 1,650 ft. from S and 2,310 ft. from E, Sec. 16, Blk. 74, Public School Land ..... Shut down for pipe line; total depth 3,081 ft.

Empire Gas & Fuel Co.'s No. 1-C Daugherty, 990 ft. from S and 2,310 ft. from E Sec. 16, Blk. 74, Public School Land ..... Location.

Magnolia Pet. Co.'s No. 3 Scarborough, 1,650 ft. from N and 990 ft. from W of Sec. 1, Blk. 77, Public School Land ..... Drlg. 250 ft.

A. W. Phillips' No. 2 Brown et al, 2,000 ft. S and W of NE, Sec. 4, Blk. B-5, Public School Land ..... Shut down 3,120 ft.

Prairie Oil & Gas Co.'s No. 1 Johnson, 2,310 ft. N and E Sec. 16, Blk. 74, Public School Land ..... Location.

Liner Drlg. Co.'s No. 1 Campbell, 330 ft. from N and E cor., Sec. 2, Blk. B-5 ..... Shut down 4,639 ft.

Shell and The Texas Company's No. 1-B Cowden, 600 ft. from S and W of Sec. 39, Blk. B-5, Public School Land ..... Shut down 3,116 ft.; top pay 2,585 ft.; flowing 124 bbls. per day, 40 per cent water.

Turman et al's No. 1 Daugherty, 2,310 ft. from E and 2,310 ft. from S line, Sec. 16, Blk. 74, Public School Land ..... Spudding.

STANDARD OF INDIANA TO HANDLE TIRES

(Continued from Page 42)

will continue to be available for tires of all kinds.

It is expected arrangements will be made with other oil companies so that service on tires purchased at the Standard of Indiana outlets will be available anywhere in the United States on the same basis as in home territory. The Standard of Indiana will provide similar service in its territory for the customers of the oil companies with which reciprocal arrangements will be made. A tire purchased in Kalamazoo will be serviced in Kansas City or Portland, Me., or vice versa.

Co-operation With Dealers

A distinctive feature of the Standard of Indiana plan is the provision for selling not only through company owned or controlled stations but also through independent dealers who are operating filling stations, garages and wayside stores. To this class tires will be wholesaled on a basis assuring them satisfactory profits. This arrangement is being made, it was announced, in order to disturb as little as possible the business of the small shops handling tires. The same instruction as to the servicing of tires that is to be given to the company's own attendants will be available to these independent dealers, and the company will back their tire guarantees.

Statement of Board

In connection with the announcement, the board of directors issued the following statement:

"We are taking a very important evolutionary step in developing our marketing policy. But we feel that we are only meeting the demand of the public for more service from the service station. We can almost say that our action is forced by the trend of the times.

"For a long time the motorist has been dependent on the service station, the garage and the roadside store for the servicing of tires with air. Now he may turn to these for complete tire service day and night, including Sundays.

"More and more the motorist is looking to the service station as the main base of operations for motoring. And this is entirely logical. It is in harmony with standardization and simplification of the distributive process in business that the service station should cater more extensively than in the past to the needs that arise in connection with operation of automotive vehicles.

"We have carefully watched experiments made in selling tires at oil stations and have become convinced that this method of handling tires is required to meet changing conditions and will greatly benefit the motoring public.

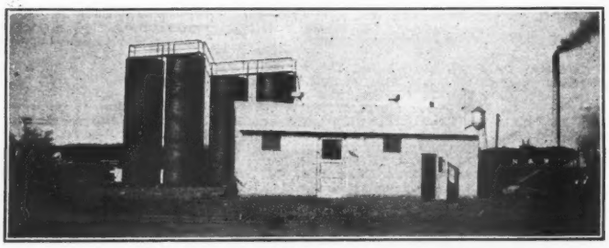
"While we have sold some commodities other than petroleum products at service stations, we have not previously done so in anything like the large way we are now undertaking as to tires. Tires fit naturally into our selling arrangements.

"We have no doubt whatever that the sale of tires at our stations and by dealers connected with us will prove instantly popular and that patronage will quickly develop on such a scale as to extend remarkably the usefulness of the service station in relation to operation of motor vehicles."

PANHANDLE OIL DIVISION

An oil and gas division of the Panhandle Chamber of Commerce has been created with W. H. Hayman chairman of the division. John Sheridan of the Shamrock Oil & Gas Co., J. H. Clark of the Midwest Exploration Co., Bob Lynn of the Phillips Petroleum Co., W. W. McIlroy of the Dixon Creek Oil Co., J. M. Sanford, independent operator, and C. M. Humphreys, independent operator, form the committee which will aid in promoting the petroleum industry in the Panhandle district.

YOUR ENTIRE PROGRAM OF BULK PLANT CONSTRUCTION



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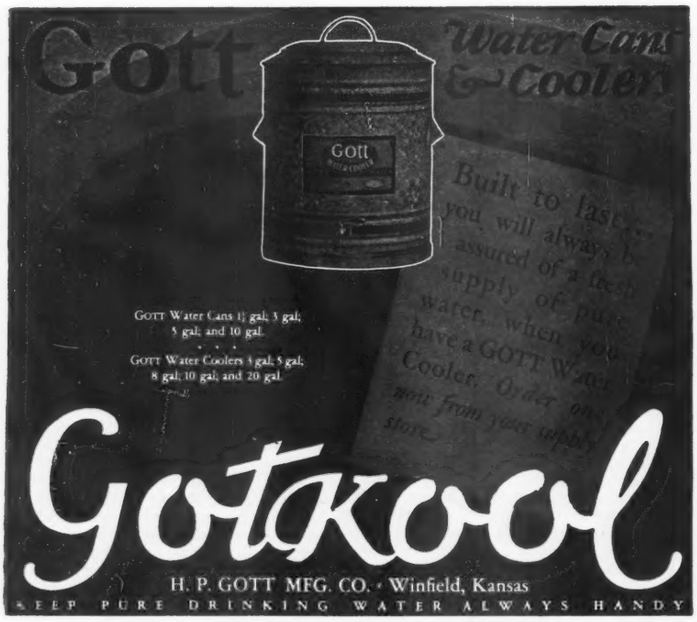
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Classified Wants Department

The OIL and GAS JOURNAL

CENTRAL WEST FIELDS

(Continued from Page 84)

to save the gas, which had a reported volume of 9,000 feet.

William Bell and others' No. 4 well, 200 feet from the north line and 625 feet from the east line of the Fred Lindy farm, SW Section 31, Clay Township, Pike County, developed into a dry hole at 1,790 feet. In Washington Township, same county, the Ohio Oil Co. abandoned No. 3 on the D. P. Gray, NE Section 29. Ohio Oil Co. and Bement pulled out No. 6 on the L. C. Chew farm, NW Section 32, same township, as well as No. 14 L. C. Thomas farm, same section.

Arrangements are being made for an active drilling campaign in untested territory in Indiana in hopes of opening a new gas producing area in various parts of the State.

ILLINOIS

Only two completions were reported from Illinois, one a wildcat venture by Beck & Butler on the Adolph Schreiber farm, Section 30, Red Bird Township, Randolph County, which developed into a dry hole from 1,728-88 feet, where salt water was encountered.

In the Allendale Field, Wabash Township, Wabash County, the Robinson Oil Co.'s No. 3 well, 200 feet from the north line and 800 from the east line of the Hattie E. Robinson farm, NE Section 15, pumped an initial of 12 bbls. in the Biehl sand from 1,462 to 1,507 feet. Adams Corner Oil Co. is drilling a second test on the John Leek farm, Section 22, same township.

Several wells are due for completion in the Dupo Field, of St. Clair County, southeast of East St. Louis, and also around Collinsville.

ROCKY MOUNTAIN AREA

(Continued from Page 60)

feet. Continental's No. 4-A State, NE NW SE, Section 29-18-38, is still a location, and its No. 1-B State, C SW SW, Section 33-18-38, is drilling at 3,977 feet in lime. Same company's No. 2-B State, NW cor. SW, Section 33-18-38, is drilling at 3,750 feet in anhydrite and lime and had gas at 3,670 feet, and its No. 3-B State, CNL, SW, Section 33-18-38, cemented the 9⅝-inch at 2,754 feet. Last named bottomed the salt at 2,570 feet.

Empire Tests

The Empire Gas & Fuel Co.'s No. 1 Hardin, SE cor. NW, Section 19-18-38, is drilling at 3,955 feet in lime and encountered the first oil at 3,255 feet, and its No. 2 Hardin, SW cor. NW, Section 19-18-38, is drilling at 3,410 feet in lime and sand. Last named topped the brown lime at 2,820 feet and had the first gas at 2,846 feet and the first oil at 3,180-3,220 feet. The Empire company's No. 2 Fowler, NW cor. NE, Section 31-18-38, is drilling in the pay at 4,065 feet. The top was at 4,061 feet.

The Gypsy Oil Co.'s No. 4 Grimes, NE cor. NW, Section 32-18-38, is drilling at 3,895 feet in lime, and its No. 6 Grimes, SE cor. SW, Section 32-18-38, is drilling at 2,640 feet in anhydrite. The top of the anhydrite was at 1,510 feet.

Hobbs High, Inc.'s No. 1 Tatum, NW SW SW, Section 35-18-38, is bottomed at 3,862 feet in anhydrite and lime and is drilling up bailer.

The Humble Oil & Refining Co.'s No. 8 Bowers, SW cor. SE, Section 30-18-38, is drilling at 3,878 feet in lime and had a show of gas at 3,719-21 feet, and its No. 9 Bowers, SE SW NW, Section 29-18-38, is drilling at 3,885 feet in lime. Same company's No. 10 Bowers, NE NW SW, Section 29-18-38, topped the anhydrite at 1,480 feet and is drilling in that formation at 1,510 feet, and its No. 1 Grimes, SW NE NE, Section 29-18-38, is rigging up rotary at 245 feet. Humble's No. 1-A State, NE cor. SE, Section 25-18-38, is rigging up rotary at 212 feet.

The Landreth Production Co.'s No. 2-B State, CSL NW, Section 33-18-38, is drilling at 3,795 feet in lime and had a show of gas at 3,668-75 feet.

The Midwest Refining Co.'s No. 6 McKinley, NW cor., Section 5-19-38, is drilling at 2,256 feet in salt. It topped the anhydrite at 1,460 feet and the salt at 1,725 feet. Its No. 1 McKinley, NE cor. NW, Section 5-19-38, is rigging up rotary, and its No. 26 Terry, C SE SE, Section 9-19-38, is fishing at 2,950 feet, the hole having bridged and caught the bit. It bottomed the salt at 2,570 feet and had shows of gas at 2,730, 2,873 and 2,886 feet. The Midwest's No. 29 Turner, C SW SW, Section 34-18-38, has cellar completed, and its No. 4 State, NE NW SE, Section 4-19-48, is drilling out plug at 3,976 feet.

The Ohio Oil Co.'s No. 2 State, SE cor. SW, Section 30-18-38, is drilling at 3,835 feet in lime, and its No. 3 State, NW cor. SW, Section 30-18-38, is drilling in salt at 2,040 feet. The top of the anhydrite in the last named was at 1,480 feet. Same company's No. 4 State-Northrup, NW cor. SE, Section 32-18-38, is running the 7-inch at 3,940 feet in the lime, and its No. 5 State-Northrup, SW cor. SE, Section 32-18-38, is drilling at 1,348 feet in the red beds.

The Prairie Oil & Gas Co.'s No. 2 Selman, SW cor. NE, Section 15-19-38, is shut down for orders after completing cellar, and its No. 1 Grimes, SW cor. NW, Section 28-18-38, is drilling at 3,470 feet in sandy lime. Last named topped the brown lime at 2,800 feet and had the first gas at 2,822 feet and the first oil at 3,200-10 feet. There was an increase in the oil at 3,220-40 feet. The elevation is 3,648 feet.

Shell's Tests

The Shell Petroleum Corp.'s No. 1 Berry, SE cor., Section 31-18-38, cemented the 7-inch at 3,995 feet in lime, and its No. 4-A State, SW cor. NE, Section 32-18-38, is bottomed in the pay at 4,185 feet and is preparing to test. Same company's No. 1-B McKinley, CNL SW, Section 20-18-38, is drilling at 1,485 feet in red rock, and its No. 1-B State, NW cor., Section 33-18-38, is drilling at 3,165 feet in lime and anhydrite. Last named topped the brown lime at 2,770 feet, had the first gas at 2,785 feet and the first oil at 3,145-60 feet. The gas is estimated at 30,000,000 feet. Shell's No. 1 Grimes, SW cor., Section 28-18-38, is drilling at 3,347 feet in anhydrite and lime. It topped the brown lime at 2,770 feet and had the first gas at 2,787 feet. The elevation is 3,647 feet. Same company's No. 2 Grimes, NW cor. SW, Section 28-18-38, cemented the 9⅝-inch at 2,751 feet, and its No. 2 McKinley, SE cor. SW, Section 20-18-38, is drilling at 450 feet in red rock. Shell's No. 4 McKinley, SE cor. SW, Section 19-18-38, cemented the 7-inch at 3,975 feet. It had a show of gas at 3,718-35 feet. Same company's No. 5 McKinley, NW cor. SE, Section 19-18-38, cemented the 7-inch at 3,975 feet, and its No. 6 McKinley, NE cor. SW, Section 19-18-38, cemented the 7-inch at 3,975 feet. Shell's No. 7 McKinley, NW cor. SW, Section 19-18-38, is running the 7-inch at 3,980 feet. It had gas at 3,975-80 feet.

The Skelly Oil Co.'s No. 1 Fowler, NW cor., Section 31-18-38, is drilling plug at 3,970 feet.

The Sun Oil Co.'s No. 2 McKinley, C SE NE, Section 5-19-38, is drilling at 480 feet in the red beds, and its No. 3 McKinley, NW cor. NE, Section 5-19-38, is preparing to spud.

The Texas Company's No. 2 McKinley, C NE SE, Section 5-19-38, spudded August 28, and cemented the 12½-inch at 209 feet, and its No. 1 McKinley, NE NW SW, Section 4-19-38, cemented the 6⅝-inch at 3,963 feet. Same company's No. 2-C State, SE cor. NE, Section 25-18-37, cemented the 9⅝-inch at 2,756 feet. It topped the anhydrite at 1,500 feet and cut the salt at 1,605-2,695 feet.

The Texas Pacific Coal & Oil Co.'s No. 2-G State, NE cor. SE, Section 24-18-37, is drilling at 3,850 feet in anhydrite. It had the first gas at 2,849 feet and the first oil at 3,373-78 feet.

The Tidal Oil Co.'s No. 1 Hardin, SW cor. NE, Section 19-18-38, is coring in lime at 4,070 feet, and its No. 2 Grimes, SW SE NE, Section 29-18-38, is troubled at 3,895 feet, having lost its circulation. Tidal's No. 3 Grimes, NE cor. SE, Section 29-18-38, is drilling at 1,320 feet in red rock.

Eunice District—Lea County

The Ohio Oil Co.'s No. 1 State-McDonald, SW NW SW, Section 15-22-36, in the Eunice district, Lea County, is being tested at a total depth of 3,900

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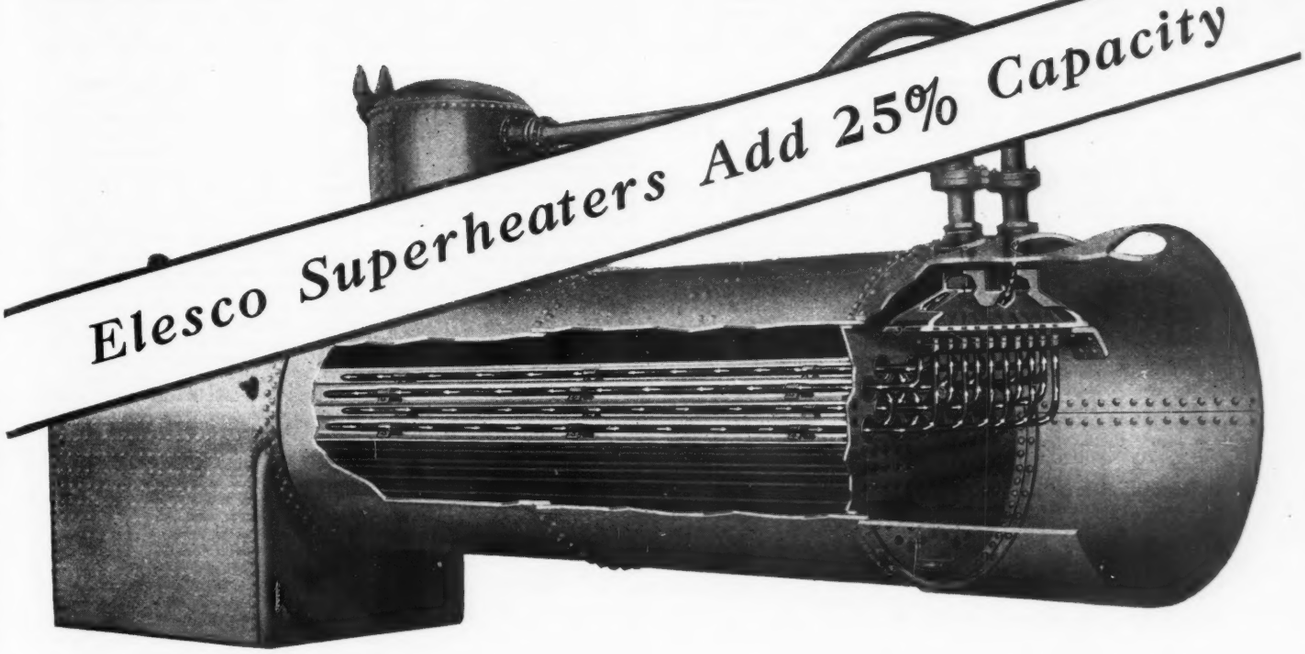

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feet and appears to be good for 200 bbls. of oil and 30,000,000 feet of gas. The well is a wildcat and points to the opening of a new oil pool. It is approximately 25 miles southwest of the center of the Hobbs Pool and the same distance southeast of the Lea, or Lynch Pool. The Texas Pipe Line Co.'s line runs close to the well. The location is 3 miles to the southeast of the Empire Gas & Fuel Co.'s No. 1 Closson, NE NW SE, Section 6-22-36, which was completed last May at 4,190 feet after plugging back from 4,237 feet to shut off sulphur water. No. 1 Closson produced an average of 145 bbls. per day at the start from 3,737-40 feet, the oil being 35.6 gravity. It is 2½ miles due south from Gypsy Oil Co.'s No. 1 Ramsey, SW cor., Section 34-21-36, which was completed as a 20,000,000-foot gas well early in 1929 at 3,856 feet after plugging back from 3,959 feet to shut off sulphur water. The nearest test in the opposite direction is Continental Oil Co.'s No. 1 William Meyers, SW NW, Section 28-22-36, 2 miles to the southwest, which has shown a large volume of gas, but which is still uncompleted due to a bad fishing job. The wildcats so far drilled indicate a northwest-southeast trend of the high, with a small producer of the Continental Oil Co. 5 miles to the northwest. No. 1 State-McDonald cemented casing at 3,645 feet on top of a sand in which it encountered a flow of 30,000,000 feet of gas spraying some oil. Coring then continued to 3,900 feet where it stopped to test. Continental's No. 1 William Meyers, SW cor. NW, Section 28-22-36, is still trying to sidetrack tools at a total depth of 3,670 feet. It has not made any new hole for nearly a year.

Farther to the north and west in the Eunice area, the Tidal Oil Co.'s No. 1 Colman, SW cor. NE, Section 17-21-36, was drilled a little deeper to 4,032 feet at which depth it is flowing an average of 367 bbls. daily from the lime and making 3½ bailers of sulphur water in 18 hours. This well is half a mile northeast of the Continental's No. 1 A. E. Meyers, a producer. Getty Oil Co.'s No. 1 State, NE cor., Section 19-21-36, is drilling at 3,700 feet. It had big gas at 3,180 feet and more gas at 3,509 feet.

Caprock Area—Lea County

The Texas Company's No. 1 Bridges, SE cor. NW, Section 17-17-34, is bottomed at 210 feet and riging up rotary.

Lovington Area—Lea County

Gault, Brown and others' No. 1 State, SW NW NW, Section 9-15-35, is rigging up cable tools.

Cooper Area—Lea County

The Texas Pacific Coal & Oil Co.'s No. 1 State, SE cor. SW, Section 22-23-36, is bottomed at 4,340 feet in lime and running the 7-inch casing. It had a show of oil at 4,235-4,300 feet. This well was completed last June at 3,668 feet after plugging back twice from a total depth of 3,995 feet to shut off sulphur water. It made 15,000,000 feet of gas. Recently it was decided to go back into the hole, and test the formations below the old bottom.

Chaves County

The Warman Oil Trust's No. 1 Seibert, NE, Section 27-13-24, hade a hole full of salt water at 1,311-19 feet. At 1,682-85 feet there was a show of oil and gas through 1,600 feet of water, and the 8¼-inch casing is being lowered to make a shutoff.

Eddy County

The Getty Oil Co.'s No. 6 Dooley, C NW SW, Section 24-20-29, in the Twin Mounds district, is a location. It is three-fourths of a mile east and south of No. 5 Dooley, recently abandoned, and about the same distance north and south of two producers.

San Juan County

The Murchison Oil Co.'s No. 1 Angel Peak, SW SE, Section 11-28-11, Kutz Canon, is building steel rotary derick and rig for a test to the Mesa Verde.

COLORADO

Morgan County

The Indian Territory Illuminating Oil Co.'s No. 1 State, NE NE, Section 16-1n-57, Fort Morgan anticline, in Morgan County, was shut down on September 8 at a total depth of 2,780 feet.

Weld County

The Platte Valley Petroleum Co.'s No. 1 Patterson, SW SW, Section 24-6n-61, Greasewood Dome, is drilling at 6,480 feet and carrying 4¾-inch casing. The odor of gasoline is reported to be much stronger. This hole is supposed to have topped the Benton shale at approximately 6,280 feet. This shale, which lies above the Dakota, was 720 feet thick in the Sterling Oil Co.'s test at Padroni, 50 miles to the northeast, 768 feet in the Akron Oil & Gas Co.'s well 60 miles to the southeast, and 440 feet in the Midfield test, 120 miles to the east and south.

Larimer County

The Continental Oil Co.'s No. 1 Hoffman, SW NE, Section 23-4n-70, Deininger Dome, is drilling at 655 feet after recementing 10-inch at 490 feet. The top of the Pennsylvanian is expected at around 1,250 feet. Same company's No. 3 Scott, SW SE, Section 6-9-68, Wellington Dome, is standing cemented at 4,585 feet, at which depth it was troubled with cavy ground. It is bottomed between the Dakota and Lakota sandstones.

Adams County

Nettie M. Slatt's No. 1 Hills, SE cor., Section 27-3s-64, is drilling below 2,190 feet.

Arapahoe County

J. W. Merritt and others' No. 1 Union Pacific, SE cor. NW, Section 17-5s-64, Watkins district, is drilling below 1,159 feet and is approximately 200 feet off the first objective horizon.

Jefferson County

The Ruby Hill Oil & Gas Co.'s No. 1 Braden, SE cor., Section 24-4s-69, is shut down at 3,664 feet waiting for new cable.

Douglas County

The Perry Park Oil & Gas Co.'s No. 1 Cannon, SE NW, Section 11-9s-68, is drilling at 1,950 feet. At 1,670 feet it had a good show of gas that burned 5 to 6 feet above the casing.

Baca County

The A. R. Jones Oil & Operating Co.'s No. 1 Boice Cattle, NW NE, Section 22-34-42 (Tract 50), Miles Camp structure, is reported to have had between 500,000 and 750,000 feet of gas probably around 2,200 feet. At 3,680 feet it was underreaming 8¼-inch.

Pueblo County

The Kuykendall Oil Corp. has been organized by Pueblo parties and is moving in machine on Section 7-22s-66, in the Beulah district on the Rock Creek structure, for a 1,000-foot test to the red beds. Allen and Hill have the contract.

Fremont County

The Continental Oil Co.'s No. 1 Shaw, NE SE NW, Section 2-19-70, Canon City district, is bottomed at 1,765 feet and preparing to test. This well was drilled deeper from 1,110 feet where it was completed as a producer in 1927.

Delta County

The Crawford Oil & Gas Co.'s No. 1 McKissen, SW NE, Section 28-15-91, is shut down at 1,050 feet in a 12½-inch hole. It is through the Dakota which had a small show of gas in the top, but no oil or water.

Mesa County

The Argo Oil Co.'s No. 1 Hoel, NE cor., Section 23-8s-104, has filled back to 2,450 feet, and will shoot the 8¼-inch just above where it was frozen. The tools are at the bottom and sidetracking tools also are in the hole. All iron will be sidetracked and the 8¼-inch landed on top of the Dakota at 2,740 feet.

Routt County

The Fish Creek Oil & Gas Co.'s No. 1 Omholt, NE cor. SE, Section 29-4n-87, Fish Creek structure, is ready to spud. This formerly was carried as George E. Gillespie and others, who moved in rig last year from the Alliance well in Axial Basin. The location is close to a well drilled several years ago by the Twenty Mile Oil & Gas Co. which had shows of oil and gas at 260 and 1,720 feet. Spudding is expected to begin September 17. The Texas Production Co.'s No. 4 Carstarphin, NE NW NW, Section 5-6n-86, Tow Creek, is bottomed at 290 feet and straightening hole at 200 feet.

Moffat County

S. H. Keoughan and others' No. 1 State, SW SW, Section 16-4n-101, Midland Ridge, or Skull Creek, was delayed by cavy ground and stopped to cement at 2,400 feet. The beds have thickened considerably on top of the structure and the objective sands in the Pennsylvanian probably will be 350 to 400 feet deeper than expected. The Midwest Refining Co.'s No. 24 Hannewalt, SE SE, Section 4-6n-92, Bell Rock, is drilling below 3,025 feet in gray sand. The Texas Production Co.'s No. 12 Knowlton, SW SE, Section 33-5n-91, Moffat Dome, is rebuilding rig destroyed by fire and will complete the hole with cable tools. It is bottomed at 4,578 feet in the Sundance with considerable oil in the hole. The Mountain Fuel Supply Co.'s No. 1 Musser, C NE, Section 5-11n-97, Powder Wash, is drilling at 2,100 feet.

Dolores County

The Ohio Oil Co. has taken over the operation of the Transcontinental Oil Co. on the Glade structure in Dolores County, following the merger of the two companies and its No. 1 Stathopulos, C NW, Section 30-41-16, is bottomed at 6,747 feet in shale and repairing rig after cementing cavy ground. This well originally was started by the Moody Oil Corp. in July, 1927, and taken over by the Transcontinental the following year. It started in the McElmo formation, the Dakota being eroded. At 3,802 feet it was in the Cutler formation and a short distance above the upper Hermosa, or Pennsylvanian age. The derrick floor is 8,300 feet above seal level and the operation usually shuts down during the winter months.

Archuleta County

The Standard Oil Co. of Colorado's No. 1 Fitzhugh, NW SE SW, Section 34-33n-1e, Chromo Dome, is bottomed at 502 feet and running a string of 12½-inch. This well had a good show of oil at 310 feet which attracted considerable attention. There have been varying reports as to the quantity, but S. H. Weber, speaking for the company, says if a stop for a test had been made it would have bailed between 5 and 10 bbls. a day. The oil came from a sandy shale which the driller identifies as the Benton. The oil has a paraffin base and tests 38 gravity. The sands to be tested are the Dakota series down to the Sundance. The discovery has resulted in considerable geological work being undertaken in that district and some leasing. The same company is drilling its No. 1 Crowley, on the Tierra Amarilla grant, 2½ miles north of the New Mexico line, on the Price structure. It is in Township 32s, Range 2e, which is not sectionized. At 20 feet it cut a 1-foot sand showing saturation and is bottomed at 74 feet and running pipe to shut off surface water.

UTAH

The Virgin Dome Oil Co.'s No. 1, Section 16-42-14, Harrisburg Dome, Washington County, is drilling at 2,320 feet, and the Mid-American Oil Co.'s No. 1, Section 17-43-15, Bloomington Dome, is bottomed at 2,140 feet and running the 6¼-inch for a formation shutoff. The Cisco Springs Syndicate's No. 1 Moss, SE SW, Section 9-20-23, Grand County, is drilling below 2,040 feet, and the Diamond Oil Co.'s No. 1, Section 16-8s-5e, Utah County, is bottomed at 2,900 feet and preparing to run 6⅝-inch.

WYOMING

Midway Dome

The Midwest Refining Co.'s No. 11 Middy, C NE NE, Section 23-35-79, Midway Dome, joint with the H. Leslie Parker interests, the Wyoming Associated and the Midwest Oil Co., is being given a 10-days' pumping test from the second bench of the Second Wall Creek sand at a total depth of 5,215 feet . While the well made several flows by head shortly after being drilled to its present depth, it failed to respond satisfactorily when the 3-inch tubing was run to 1,000 feet off bottom. It was swabbed through the tubing and made 30 to 40 bbls. an hour with a little water with the oil. It was then decided to run rods and make a pumping test. This started Monday morning and on the second 24-hour period it pumped 680 bbls. of fluid of which one-third was water. This tubing is to be replaced with a heavier string with special seamless joints and run to the bottom as soon as it arrives and an attempt will be made to exhaust the water. When the water is exhausted, it is believed it will pump better than 1,000 bbls. of fluid. After the 10-days' test is completed, it will be decided whether to plug off the bottom from which it is now believed the water is coming. A 2-mile 6-inch line has been laid from the well to a connection with an 8-inch line from Salt Creek which has not been in use for some time.

Natrona County

The Wind River Oil & Gas Co.'s No. 1 De Long, NE SE, Section 9-38-78, west of Teapot, cemented the 6⅝-inch at 3,252 feet to shut off water in the first Wall Creek. This sand proved to be 124 feet thick. The second Wall Creek is the objective. The Cuyler Oil Co.'s No. 1 Ogden, SW, Section 24-36-85, Powder River, set the conductor pipe at 125 feet. This will be a Dakota test. The Chicago Oil Co.'s No. 3, SW, Section 1-33-83, Poison Spider, a test to the granite, is drilling at 3,848 feet, 600 feet in the Deadwood formation and is believed to be entering the contact between the Deadwood and the granite.

Converse County

The Big Muddy Field, east of Casper, which has shown practically no drilling for several years, now has three wells under way. The Ohio Oil Co. has gone back into its No. 5 Jones, Section 9-33-76, an old producer in the Wall Creek, and will deepen it to the Dakota. The 8¼-inch was set at 3,008 feet and drilling is in progress at 3,137 feet. Two years ago the Ohio had a rotary rig set up on this section for a deep test to the Lakota, but it never reached the spudding stage. The Continental Oil Co.'s No. 50 Whiteside, SW SW, Section 9-33-76, which is being deepened, is drilling below 3,207 feet. The Weisman Big Muddy Oil Co.'s No. 1, SW SE, Section 6-33-76, is drilling below 2,420 feet after setting the 6⅝-inch at that depth to shut off cavy ground.

Niobrara County

The Argo Oil Co.'s No. 7 Wehopeso, SW NW, Section 19-39-60, Mule Creek, is bottomed at 3,140 feet in red and black shale and underreaming to set 4¾-inch. It had a show of oil and gas at 3,087 feet and a show of oil at 3,125 feet, presumably in the top of the Amsden. It found water in the Embar and Tensleep. The Ohio Oil Co.'s No. 4 Converse Sheep, SW SE, Section 32-36-65, Lance Creek, a rotary test to horizons below the Muddy, is drilling at 3,184 feet.

Weston County

An acreage deal in the Osage district was reported when the Glenn Oil Co. sold 560 acres in Section 30-46-63 to R. H. Lucas, of Shinneton, W. Va., and associates. The sale included 10 producing wells. Drilling of additional wells will start this fall. There were no completions in the Osage Field this week. Hugh Updike & Sons' No. 2, NE NE, Section 14-46-64, is drilling at 900 feet, and the Yellowstone Petroleum Co.'s No. 1 McCullough, NW NE, Section 23-46-64, is drilling at 400 feet. The Lambie Oil Co.'s No. 3 Bock, SW cor. NE, Section 14-46-64, is drilling at 300 feet. This firm is starting two additional operations, its No. 4, SW NE, Section 14-46-64, is rigging up and its No. 5, NE SW NE, Section 14, is a location. Straitiff & Curtis' No. 4, SE NE, Section 14-46-64, is drilling at 500 feet. The Osage Trust Co.'s No. 6, SW cor. SE, Section 14-46-64, is drilling at 1,650 feet, and its No. 7, NW SE, Section 14, is drilling at 800 feet. Same company's No. 8, NW cor. SE, Section 14-46-64, is rigging up. James McCullough's No. 2 Logan McCullough, NE NE, Section 23-46-64, is drilling at 1,609 feet, and Moss and others' No. 2 Foster, NW NE, Section 25-46-64, is drilling at 1,200 feet. The Dexter Oil Co.'s No. 1, NW NE NE, Section 1-45-64, is drilling at 400 feet.

Hot Springs County

The Midwest Refining Co.'s No. 8 Weeks, SE NW SE, Section 6-44-98, on the Wagonhound Dome, Hot Springs County, to the north of the Hamilton Dome and southwest of Grass Creek, is at an interesting stage. At around 3,700 feet it reached the top of the Embar formation where it had a show of oil. Drilling was suspended to rathole ahead. The top of the Chugwater was at 2,885 feet. Wagonhound has been only partially test-

ed in the past, no well going below the Dakota.

Park County

The Resolute Oil Co.'s No. 1, SW NE, Section 17-57-101, Badger Basin, is drilling at 6,800 feet. The Texas Production Co.'s No. 1 Freeman, C NW SE, Section 30-51-100, Oregon Basin, looks like a fair well. It is bottomed at 3,864 feet and preparing to test. The 8¼-inch was cemented at 3,806 feet. C. M. Johnson's No. 2, SE SE, Seciton 11-49-102, Spring Creek, is drilling at 4,245 feet, below the Tensleep in which it had a small well. The Midwest Refining Co.'s No. 31 Frannie Oil, SW cor. NE, Section 25-58-98, Frannie Dome, is bottomed at 2,938 feet and preparing to bail and test water shutoff, and its No. 31 Rosenberg, SW cor. SE, Section 24-58-98, is drilling at 2,351 feet in hard gray shale. The California Exploration Co.'s No. 2, NW NE, Section 14-48-102, Pitchfork structure, is preparing to cement the 6¼-inch which was being carried at 3,371 feet. This well was drilled to 3,903 feet, probably in the Madison lime, where it was good for about 200 bbls. a day on a pumping test. The oil was around 20 gravity. The Continental Oil Co.'s No. 26 Elk 2, SE NE, Section 24-58-100, Elk Basin, is drilling at 2,408 feet.

Big Horn County

The Ohio Oil Co.'s No. 1 Easton, NW NW, Section 33-56-97, Garland Dome, is drilling at 4,048 feet. It killed a flow of 58,000,000 feet of gas in the top of the Madison lime at 3,887 feet to drill deeper. Same company's No. 1 Pryde, Section 25-56-97, Byron Dome, is drilling at 2,360 feet.

Fremont County

The Lander Corp. has been formed to drill a test on the Bartram Gap Dome, a minor hump on the north end of the Dallas structure, about 2 miles north of production. Contract has been let to Val B. Maghee and Charles Cheatam, both of Lander. The Embar at 1,300 feet and the Tensleep at 1,600 feet are the objectives. The dome is in Township 33n, Range 99w. Dr. Branson, head of the geological department of the University of Missouri, with students from the university who come to that district each summer, are reported to have worked out the structure. The Texas Production Co.'s No. 1 State, SW SW, Section 36-34-95, Alkali Butte, is waiting for cement to harden. The 6⅝-inch was set at 4,472 feet. The Dakota sand at 4,380-93 feet had 12,500,000 feet of gas and made 20 to 25 bbls. of 31 gravity green oil. The Lakota is the next objective. The Kinney-Coastal Oil Co.'s No. 1 Dykeman, SE SW, Section 22-3n-1w, Pilot Butte, is coring at 4,295 feet in a very hard lime which has been definitely identified and is estimated to be about 200 feet off the Sundance. This well, which had a big flow of gas in the Muddy, is using a fluid that is proving very satisfactory for holding down pressure. Hematite iron ore from the Rawlins district is being used in a crushed form with a mixture of powdered wilkinite, the latter being a thickener. These are mixed with ordinary mud to give the desired weight and consistency. The Producers & Refiners Corp.'s No. 10, NW cor., Section 14-32-95, Sand Draw, is bottomed at 3,631 feet, total depth, with the 10-inch at 3,426 feet and waiting for cement truck. The core showed heavy gas saturation in the Muddy, topped at 3,457 feet, this being the first well to test any formation below the Frontier on this structure. Same company's No. 2, SE NW, Section 33-34-92, Muskrat Dome, is coring at 4,153 feet. This is approximately the depth at which big gas was found in the discovery well 1½ miles to the southeast.

Carbon County

The Producers & Refiners' No. 3, SE NW, Section 2-19-88, Hatfield Dome, is bottomed at 4,225 feet. The tools are out and underreaming is in progress at 4,168 feet. The 4½-inch is at 4,138 feet. Same company's No. 4, Section 7-26-89, Wertz, Dome, is fishing for tools at 3,386 feet, total depth. The Hughes Royalty Co.'s No. 1, SE, Section 25-26-88, Mahoney Dome, which is to be deepened to the Sundance, is sidetracking tools at a total depth of 3,515 feet. The hole has been standing for some time, making some gas and about 100 bbls. of oil. C. E. Bivens and others' No. 1 Red Feather, SE, Section 35-13-92, Baggs Dome, cemented 6⅝-inch casing at 754 feet, on top of the gas sand and is drilling in. Three gas horizons are expected within the next 200 feet. This well is about 275 feet south and west of No. 1, the discovery well on this structure.

Sweetwater County

The Mountain Fuel Supply Co.'s No. 1 Cappers, SW cor. NE, Section 2-19-104, North Baxter Basin, is cleaning out at 3,200 feet, and its No. 1 Union Pacific, NW NE, Section 13-19-104, is drilling at 3,230 feet, below a sand in the Morrison which had several million feet of gas. Same company's No. 2 Union Pacific, Section 15-16-104, South Baxter Basin, cemented the 10¾-inch at 225 feet.

Lincoln County

The Midwest Refining Co.'s No. 1 Larcher, SE SE, Section 25-37-117, Little Grays River, is drilling at 2,392 feet in red mud.

Pipe Line Runs

Daily average pipe line runs from the various pools for the week ending September 6 follows:

WYOMING	
Salt Creek	31,540
Frannie	120
Big Muddy	2,000
Oregon Basin	2,500
Dutton	140
Elk Basin	960
Byron	180
Warm Springs	100
Lovell	20
Ferris	40
Grass Creek	2,040
Hamilton	980
LaBarge	1,330
Lance Creek	130
Lost Soldier	5,250
Osage	1,390
Poison Spider	260
Rock River	2,220
Simpson Ridge	50
Teapot Dome	20
Dallas-Derby	230
Hudson	350
South Casper Creek	820
Total	52,670
MONTANA	
Cat Creek	1,120
Kevin-Sunburst	5,850
Pondera	2,020
Lake Basin	50
Border	500
Total	9,540
COLORADO	
Moffat	1,020
Fort Collins	1,185
Florence	387
Iles	1,046
Tow Creek	361
Boulder	25
Rangley	50
Total	4,074
NEW MEXICO	
Hogback	430
Rattlesnake	1,250
Table Mesa	87
Artesia	519
Cap Rock (Maljamar)	374
Jal	1,390
Hobbs High	33,819
Lea City	5,182
Miscellaneous (Lea County)	304
Getty	180
Total	43,535
Grand total	109,819
Previous week	106,478
Difference	3,341

MONTANA

The Ohio Oil Co.'s No. 2 well in the Dry Creek Field, southern Montana, will make an 800-bbl. producer, according to authentic reports. The well is bottomed in the Dakota sand at 5,510 feet and has been making spectacular flows over the top of the derrick. Most noteworthy in connection with the new well is the grade of the crude, which shows a gravity of 52 degrees. The well may be considered the discovery well in a new oil field, as the Ohio's first hole on this structure was a gas well good for about 11,000,000 feet. The new producer is about a quarter of a mile southeast of the gas well, on Section 11-7-21, and about 6 miles east of the town of Red Lodge. The Ohio has converted its 8-inch gas line from Dry Creek to Bridger into an oil carrier and will begin crude shipments at once from the new well.

Only one completion was reported this week from the Border-Buckley Field, the Ohio Oil Co.'s No. 2 Farbo, on Section 2-37-4, which was plugged back from the lower sands and saved for a gas well at 2,537 feet. The well is good for about 750,000 feet. On account of its location a half mile west of production this well was watched with great interest, and it was thought at one time that it would be an oil producer and prove up the intervening territory.

Kevin-Sunburst

In Kevin-Sunburst Field the Rice Oil Co. drilled its No. 12 Byrne, Section 30-35-1, to the Ellis after finding a commercial well in the stray sand above the Ellis, and reports an initial production of about 30 bbls. In the same field, the California Co. found only a show of oil at the Ellis-Madison contact in its No. 2 Shaver and shot the well at a depth of about 100 feet in the lime. It looks as if this may make a small commercial well. The Northern Natural Gas Co.'s No. 5 Frogge, on Section 24-33-2, found a showing of gas in the stray sand but drilled on into the lime and finally abandoned the hole. The East Side Oil Co.'s No. 1 Swan was shot twice in the gas sand and is now estimated at 3,000,000 feet. The California Co.'s No. 12 Abel was carried to a total depth of 1,601 feet and then abandoned.

Cut Bank

The Texas Production Co.'s well, on Section 13-35-6, Cut Bank area, is drilling close to 2,500 feet and should be completed within a few days. This well is some distance from other completions, all of which have been gas producers.

Several interesting new tests are being started in Montana at this time. The Northern States Oil Co., affiliated with the Book interests of Detroit, has spudded on Section 20-14-24, Button Butte structure, Fergus County. This well is at the west end of the Flatwillow structure. F. M. Blake and associates of Billings will drill a test in the Happy Hollow district, Lake Basin anticline. A well drilled in this locality several years ago found gas showings in the Frontier but is now believed to have been off structure.

PANHANDLE FIELDS

(Continued from Page 72)

tion 20 bbls.; total depth 1,102 feet. Ard & Son's No. 2 Terrel estate, dry and abandoned; total depth 740 feet. Arkansas Fuel Oil Co.'s No. 1 Jeffery, dry and abandoned; total depth 955 feet. W. P. Chancellor's No. 1 True School district, dry and abandoned; total depth 730 feet.

George B. Chancellor's No. 1 Kilcrease, dry and abandoned; total depth 1,030 feet. Jack Harris' No. 1 Brooks, dry and abandoned; total depth 674 feet. T. F. Hunter and others' No. 4 Bloodworth, oil sand 1,069-82 feet; initial production 10 bbls.; total depth 1,082 feet. T. F. Hunter and others' No. 3 Bloodworth, oil sand 1,058-84 feet; total depth 1,084 feet; plugged back to 1,077 feet; initial production 30 bbls. King Oil & Royalty Co. and Bullington's No. 5 Graham, oil sand 683-95 feet; initial production 200 bbls.; total depth 695 feet. Petroleum Producers' No. 1 Graham, oil sand 670-83 feet; initial production 160 bbls.; total depth 694 feet. Roy Sutz' No. 1 Finch and others, oil sand 627-33 feet; initial production 55 bbls.; total depth 633 feet. Staley & Wynn and Kruger's No. 2 Bloodworth, oil sand 1,052-75 feet; initial production 28 bbls.; total depth 1,075 feet. Willis and Terrell's No. 1 Jack Rux, dry and abandoned; total depth 620 feet. Wooten and Reed's No. 2 Jordan, dry and abandoned; total depth 760 feet. Long and others' No. 2 State Land, top pay 2,466 feet; initial production 500 bbls.; total depth 2,500 feet. Monstieff and others' No. 1 Railroad Right of Way, dry and abandoned; total depth 3,865 feet. Producer Supply & Tool Co.'s No. 7 McCluskey, total depth 2,210 feet; plugged back to 2,107 feet; initial production 5 bbls. on pump from old pay at 2,088-2,107 feet. Slick and Knox's No. 1 Robertson, total depth 4,025 feet; plugged back to 3.817 feet; shot 15 quarts from 3,812-17 feet; initial production 50 bbls. with 250,000 feet of gas.

RELATION OF GUM TO ANTIKNOCK VALUE

(Continued from Page 40)

drum was noted, the receiver was emptied and the time recorded. At the conclusion of the experiment the same readings were taken and the distillate and gas set aside for analysis. Experiments were conducted at temperatures varying from 430° C. to 700° C. The time of contact varied from 0.75 seconds to 4,800 seconds, or 1 hour and 20 minutes. The quantity of oil put through the apparatus varied from 3,000 centimeters to 300 centimeters, depending on the time of contact and the information wanted."

Conclusions Reached

The following conclusions were made by the authors:

"1. For the cracking reaction at atmospheric pressure similar results are obtained by increases in temperature or in time; that is, it is possible to duplicate approximately short time high temperature results by long times at low temperatures. A temperature increase of 17° C. approximately halves the time. It is possible to consider time and temperature together as a time-temperature index.

"2. As time-temperature is increased the yield of gasoline increases rapidly to a maximum, which is slightly higher at the lower temperatures, and then decreases slowly.

"3. The properties of the gasoline are the same for a given time-temperature index. Increasing time-temperature results in (a) an increase in the antiknock value of the fuel, (b) a rapid increase in unsaturation followed by a slow decrease, and (c) a rapid decrease in the critical temperature of solution with aniline.

"4. Gas yields increase rapidly to a maximum of 60-70 per cent by weight. The ratio of gas to gasoline increases considerably with time-temperature and slightly with temperature for a given time-temperature index. The unsaturation content of the gas increases with temperature at a given index only under severe cracking conditions.

"5. Coke yields are higher in packed tubes, due probably to the 'wetting' of the surface with droplets of partially polymerized hydrocarbons.

"6. Recycling runs show a considerable change in the chemical character of the charging stock due to its continued heat treatment. As recycling is continued gas and gasoline yields continually drop, whereas tar and coke yields rapidly increase. The hydrogen content of the gas increases due in part to the increased coking reaction taking place."

Study Combustion Gases

Another paper of great interest and one showing the growing application of chemistry to solve practical problems was presented by Lloyd Withrow, W. G. Lovell and T. A. Boyd of the General Motors Research Laboratories. The paper summarized the results of experiments in which samples of the gases of an automotive engine were chemically analyzed. These samples were withdrawn from the cylinder during definite positions in the cycle of operation so a resume of the analyses of these samples taken in successive positions of the piston gave an accurate idea of the progress and duration of the combustion of the gasoline vapors. Previous work had been done using a valve which operated over a range covering approximately 20 per cent of the engine rotation. The new valve, which was found to be more accurate and precise in its action, effectively operated over a range as low as 2 per cent of the engine's rotation.

With this improved sampling apparatus and a new engine, samples have been removed at several different positions in the combustion chamber and at various times after ignition while the engine was running with gasoline as fuel. The results of the analyses of these samples for oxygen were plotted against the respective angles of revolution at which the samples were removed, and the conclusions about the nature of the combustion reaction in the gasoline engine which have been derived therefrom, as well as in what

respects they differ from the previous conclusions are presented in this paper.

Test Procedure

Before any samples were removed from the combustion chamber the engine was permitted to run at least one-half hour to allow conditions to become constant. The mixture ratio was then adjusted to maximum power which in this engine corresponded to 80 per cent of the air required for complete combustion. Then after the spark had been adjusted for maximum power the engine was ready for the sampling operations. Since the sampling apparatus was adjusted to remove approximately 1 cubic centimeter of gas per explosion, a short time was required for the removal of each sample, and as a result each sample represented an average of several explosions.

The gas was collected directly in a modified orsat apparatus and analyzed immediately for carbon dioxide and oxygen. When samples had been removed from the combustion chamber at several different times after ignition the mixture ratio was rechecked by an analysis of the gas in the regular exhaust for carbon dioxide and carbon monoxide. If it was found that the mixture ratio had changed during the course of the run, the experiment was repeated.

Results Summarized

In summarizing their results the authors said:

"1. Under the conditions defined in this investigation the combustion process in the gasoline engine consists of a narrow combustion wave which proceeds from the spark plug through the combustion chamber at a finite rate.

"2. The combustion zone travels at a greater rate and follows a different type of acceleration curve through the middle portion of the combustion chamber than along the side walls of the combustion chamber.

"3. Over the range investigated the average speed of the combustion zone increases with the engine speed. The progress of the combustion zone is unaffected by a change in spark timing or by the addition of sufficient lead tetraethyl to the fuel to stop detonation until after it has traveled the greater portion of the distance across the combustion chamber.

"4. The disturbance which is known as the knock or detonation is confined to that part of the charge which burns last.

"5. With respect to events in the latter portion of the combustion space where detonation occurs when it is present, definite conclusions about the differences between the characteristics of normal and detonating combustion must await the results of further experiments which are under way."

Fractional Analyses

A paper of interest to refiners and natural gasoline plant operators and one again emphasizing the importance of chemical analyses was delivered by Dr. Walter J. Podbielniak, research chemical engineer. This paper discussed in detail the development of practical analyses and the various kinds of apparatus used in this development. Practical suggestions were included in the paper, discussing the limitations of various apparatuses.

Antiknock Value of Fractions

The antiknock value of various hydrocarbons was then discussed in a paper prepared by W. G. Lovell, J. M. Campbell and T. A. Boyd of the General Motors Laboratories. The work covered an investigation of 26 pure hydrocarbons within the boiling range of ordinary gasolines. The tendency of the various hydrocarbons to knock has been expressed as an analine number or equivalent since analine is a knock suppressor. The authors said:

In order to convey some conception of the magnitude of this scale of knock rating it may be stated that when tested alone or without admixture with gasoline, normal heptane, which has an aniline equivalent of —14, and 2, 2, 4-trimethyl pentane, which has an aniline equivalent of +17, begin to knock at compression ratios of 2.75:1 and 6.9:1, respectively, under certain specified conditions in an engine similar to the one used in this work.

The aniline equivalent of benzene is +10 and the aniline equivalent of the standard gasoline containing 3.0 cubic centimeters of lead tetraethyl per gallon is also about +10, when the latter determination is made by considering the lead-containing gasoline as octane with a molecular weight of 114, and adding it to the reference gasoline just as though it were an octane. Although pure benzene by itself is of much higher antiknock quality than gasoline containing 3.0 cubic centimeters of lead tetraethyl per gallon, it is not, when in dilute solution, effective to such a large degree. While these relationships may give an approximate idea of the magnitude of the scale used, they do not permit of direct translation of the values into terms of other scales, especially into those based upon other engine conditions, or in which benzene is used in high concentrations.

At concentrations below about 40 per cent by volume the aniline equivalent, either positive or negative, has been found to be substantially independent of concentrations for a number of compounds investigated. This comes about, of course, due to the fact that there is a direct proportion between amounts of aniline and amounts of compound which are equivalent in respect to knock; and the aniline equivalent, as defined, is the amount of aniline per unit amount of compound added to a given quantity of gasoline. At concentrations greater than about 40 per cent by volume the aniline equivalent is not necessarily an index to the behavior of a compound in more dilute solution.

For convenience and simplicity, the data are presented graphically in the accompanying figure. In this chart aniline equivalents are plotted as ordinates and the number of carbon atoms in the molecule as abscissae. The values for the different compounds are plotted as points, and the compounds are indicated by a partial structural formula near the point. In these formulas only the carbon atoms are represented but they are grouped as in the conventional structural formula. Thus, for example

```
      C C
      | |
C-C-C-C-C-
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represents 2, 3-dimethyl pentane, and C-C-C-C-C- represents n-pentane.

Upon this basis definite relationships between molecular structure and tendency to knock have been found for these compounds. These relationships may be summarized in the statement that in a homologous series the tendency to knock increases with the increasing length of the carbon chain, and in an isomeric series the tendency to knock usually decreases as the number of side chains is increased. The successive introduction of methyl groups into a carbon chain of given length also decreases the tendency to knock, and by substantially a constant increment per methyl group added.

THREE COMPLETIONS IN MT. PLEASANT ADD 1,080 BBLS. NEW PRODUCTION

By Paul A. Elliott

MUSKEGON, Mich., Sept. 15.—Three of the best initial producers in the Mount Pleasant Field of central Michigan were brought in last week in Section 2, Chippewa Township, Isabella County, and Section 8, Greendale Township, Midland County, in the main pool. Each of the three made more than 300 bbls. a day and they averaged 360 bbls., a total of 1,080 bbls. of new production to offset three dry holes in new or wildcat regions in that part of the State.

The Pure Oil Co.'s No. 1 Emmett Scott, SW SE NW, Section 8-14n-3w, Greendale Township, topped the Dundee limestone at 3,510 feet, had the pay sand at 3,545 feet and at a total depth of 3,556 feet made 380 bbls. initial.

The Dixie Oil Co.'s No. 7 N. Davis, the largest of the two in Section 2, Chippewa Township, struck the Dundee at 3,517 feet, the pay at 3,544 feet and at 3,585 feet made a 370-bbl. well. It is located SW NE SW, Section 2-14n-3w.

The G-Lee-P Oil Co.'s No. 4 E. Grubb, NE SW SW, Section 42-14n-3w, made 330 bbls. initial, topping the Dundee at 3,519 feet, the pay at 3,553 feet and finishing at 3,589 feet.

The Chartiers Oil Co.'s No. 2 Wesche, SW SW SW, Section 30-15n-3w, Denver Township, Isabella County, and the No. 1 Wesche of the same company located SE NW NW, Section 29-15n-3w, were declared dry. They are in the Leaton area. No. 2 topped the Dundee at 3,619 feet and struck oil, gas and water at 3,556-61 feet.

The Marble-Cowe Oil Co.'s No. 1 Charles R. Smith, NE NE NW, Section 28-22n-9w, Haring Township, Wexford County, near Cadillac, is dry at a total depth of 3,952 feet after testing to and through the Dundee.

Muskegon Field

One small oil well and a dry hole in the Dundee were completed in and near the proved Muskegon oil field last week. The new Dundee producer is the Midwest Oil Co.'s No. 2 Mrs. Moch heirs, SE NE, Section 7-10-16, Muskegon Township, which made about 25 bbls. initial although the exact pay sand levels have not been revealed. It is on the Bear Creek flats.

The Valek Oil Co.'s No. 1 Valek, NE SW NE, Section 3-10n-16w, Muskegon Township, east of the proved field, is dry in the Dundee formation and shut down at 2,203 feet to await decision to abandon or go deeper.

The White River Oil Corp.'s No. 5 well on the William Lipka, NE SE, Section 19-12n-17w, Montague Township, Muskegon County, also is reported to be dry and shut down in the upper Traverse formation at about 1,700 feet.

The Muskegon Development Co.'s No. 1 Hughes, W half SW, Section 34-1n-9w, Barry Township, Barry County, is a central Michigan wildcat which also proved dry last week in the Traverse at 1,925 feet.

Neely, Forster and Senn's No. 1 Hewitt and Buteau, SE NE, Section 12-10-17, Laketon Township, Muskegon County, in the heart of the heavy Dundee production area of the old Muskegon Field, has quit producing and is being plugged in the Dundee formation.

Drilling of the field's new deep test in the NE cor., Section 8-10n-16, Muskegon Township, on the Herman Heinz property, has been started.

Six permits for new oil well locations, five in the Mount Pleasant area, one in Oceana County, one in Shiawassee County, and one in Genessee County were issued last week by the State Conservation Department. The Oceana County well will be the Fruitvale Land & Lot Owners' No. 1 C. J. Sipple, SW SW, Section 23-13n-16w, Otto Township, near Rochdale Inn but north of three other wildcats already drilled in this vicinity by Mr. Sipple. The Glennbrook Oil Co.'s No. 1 Strauch, NE NW, Section 11-6n-3e, Shiawassee Township, Shiawassee County, is another purely wildcat proposition. The third wildcat location is Gibson, Johnson & Borden, Inc.'s No. 1 Munsell, NE NW, Section 21-9n-7e, Thetford Township, Genessee County.

The five Mount Pleasant area locations are: Isabella Oil Development Co.'s No. 1 Bartlett, McClintic, SE cor. SW SW, Section 3-14n-6w, Broomfield Township, Isabella County; New York Petroleum Royalty Corp.'s No. 3 P. J. Marthey, SW SE SE, Section 19-15-3w, Denver Township, Isabella County; Gibson, Johnson & Borden, Inc.'s No. 1 Scott, NW NW NE, Section 35-16n-4w, Vernon Township, Isabella County; Gibson, Johnson & Borden, Inc.'s No. 1 Mahar, NE SE SW, Section 27-16-4w, Vernon Township, Isabella County; and the Geneva Oil Co.'s No. 1 Nicholson, SW SW, Section 7-14n-5w, Deerfield Township, Isabella County.

FURTHER DETAILS ABOUT KENTUCKY-INDIANA LINE

(Continued from Page 78)

pressor stations, but the sites for three stations must be purchased for future development.

From the first compressor station site, which will be somewhere near Hindman, Ky., an 18-inch electric welded steel line will be laid northwest to Winchester and then northwest through to the market of Muncie and Anderson, Ind., crossing the Ohio River en route.

This line will be coupled together with a Dayton or Dresser type coupling and will be capable of carrying, when the line is complete with the three stations, about 65,000,000 feet a day or approximately 15,000,000,000 feet a year. It is hoped that this line can be completed and in operation by June, 1931.

A large part of this line will be laid over an extremely mountainous country over the eastern part of the State of Kentucky, requiring a great deal of difficult construction work, but due to the progress made in new roads the difficulties are very much less than they were a few years ago to get material on the jobs and the State of Kentucky is to be congratulated upon its improvement in roads during the past few years.

INTERNATIONAL OUTPUT IN PERU AND COLOMBIA

CHATHAM, Ontario, Sept. 13.—Official figures have been made public covering operations during the month of July by International Petroleum Co. in the Peruvian and Colombian fields.

In Peru, 12 producing wells were completed in the month, with average initial production of 449 bbls. a day. The total crude production for the month was 804,594 bbls., while total crude shipments aggregated 361,837 bbls. Average daily production in August amounted to 24,716 bbls., the curtailment of production initiated in July being continued.

In Colombia, seven producing wells were completed in July with average initial production of 955 bbls. Crude production totaled 1,761,820 bbls. for the month, with crude shipments of 1,670,924 bbls. The average daily production in August was 56,361 bbls.

For the first seven months of 1930, 73 producing wells averaging 406 bbls. of initial production were completed in Peru compared with 103 wells averaging 166 bbls. in the first seven months of 1929. Crude production declined from 6,171,081 bbls. to 5,989,713, but crude shipments increased from 2,622,642 bbls. to 2,861,144 bbls.

In Colombia during the same 1930 period 73 new producing wells were drilled averaging 674 bbls., compared with 64 wells averaging 789 bbls. in the 1929 period. Crude production increased from 11,718,080 bbls. to 11,845,348 bbls., while shipments increased from 10,583,930 bbls. to 11,269,939 bbls.

GASSER IN TIOGA COUNTY, PA.

WELLSBORO, Pa., Sept. 15.—The Allegany Gas Co., a branch of the North Penn Gas Co. of Bradford, completed a wildcat gas well at 4,010 feet in Farmington Township, Tioga County, which is variously reported up to 10,000,000 feet. The Allegany Gas Co. owns a block of 7,000 acres in the neighborhood of Elkland, Tioga County, and this was its first well on the block. The discovery was made about 75 miles east of the Bradford Field and is in the most easterly oil or gas field in the United States. Pipe is being laid from the well to a trunk gas line 7 miles distant.

TEXAS UMPIRES

FORT WORTH, Tex., Sept. 15.—The railroad commission has appointed three umpires for various districts to carry out the general oil proration plan for the State of Texas. R. E. Andrew was appointed umpire for the Van Field, Van Zandt County, East Central Texas; W. H. Dyer for the Ranger or West Central Texas district, and H. J. Corcoran for the Panhandle district.

WILDCAT OPERATIONS IN SOUTHWEST TEXAS

(Continued from Page 58)

R. S. Bolling's No. 1 McWilliams, 150 ft. from N line, 1,111 ft. from W line of Wm. McWilliams tract, Glasscock Sur. ..... Building derrick.

BROOKS COUNTY

Humble Oil & Ref. Co.-Shell Pet. Corp.'s No. 2 Wm. Singers, 1,320 ft. W of E line, 1,800 ft. S of N line of Sec. 312, Alta Verde area, 7 miles SE from Lasater gas field ..... T. D. 4,775 ft.; tested gas and oil.

Southern Crude Oil Purchasing Co.'s No. 1 Holbien-Wormser, 990 ft. from E line, 1,000 ft. from S line of Blk. 39, E. P. de Maguellas Sur. ..... T. D. 2,912 ft.; drlg. lime.

BEE COUNTY

William F. Morgan and Independent Oil & Gas Co.'s No. 1 Quincy, C Blk. 9 of 11,000-ac. Quincy Subd. of Bee County .....T..... T. D. 4,930 ft.; blew in dry gasser.

O'Neal & Catlett's No. 1 Pat Pugh ..... Location.

Simms Oil Co.'s No. 1 Halzmark, 830 ft. SE line, 2,952 ft. SW line of J. A. York Sur. ..... T. D. 3,548 ft.; completed for 50,000,000 ft. of gas.

S. R. C.'s No. 1 Theis, 2,700 ft. from N line, 300 ft. from W line of 782-ac. tract, Burns Sur. ..... T. D. 3,800 ft.; drlg.

Hurlbut et al's No. 1 Mrs. D. Chestnut ..... Rigging up.

Walter Rawlins' No. 1 P. L. Campbell, C B.&B. Sur. .... Moving in machine.

E. S. Price's No. 3 Weiss, 900 ft. due NE of No. 1 Weiss.. Location.

E. S. Price's No. 2 Weiss, 900 ft. due SW of No. 1 Weiss, B.&B. Sur. ..... T. D. 445 ft.; drlg.

Camden Oil Co.'s No. 1 Stoltzfus, 2,310 ft. to S and E lines of Sec. 14, Ragley Subd. of C. Miller ranch, Uranga Sur. ..... Rigging up.

Humble and Hurlbut and others' No. 1 J. C. Wood, 150 ft. from NW line, 1,144 ft. from SW line of P. T. Irrigation Co. ..... T. D. 3,460 ft.; drlg. shale.

The Texas Company's No. 1 McCampbell, 150 ft. from N and E lines of 161-ac. tract, R. Pena Sur. ..... Location.

BEXAR COUNTY

Moore-Jauer's No. 1 Holly R. Ellison ..... T. D. 2,170 ft.; standing.

K. M. S. Pet. Co.'s No. 1 E. Salicky, 132 ft. from E line, 10 ft. S line of tract, Blk. 15, Mission Gardens ..... Location.

J. M. Russell's No. 1 F. L. Price, 1,590 ft. to N line, 660 ft. W line of tract in Angel Navarro Sur. ..... T. D. 206 ft.; standing.

J. M. Russell's No. 1 A. O. Miles, 1,600 ft. N line, 600 ft. W line 450-ac. tract, Angel Navarro Sur., 10 miles S from San Antonio ..... T. D. 735 ft.; moving in.

Henry Yelvington et al's No. 1 Beck, 365 ft. from W line, 310 ft. from S line 100-ac. tract, SW cor. of P. W. Hays Sur., 7 miles E from San Antonio ..... T. D. 1,470 ft.; shut down.

Snyder, Reeves et al's No. 2 Glasscock, 12 miles NE of San Antonio ..... T. D. 200 ft.; drlg.

August Magel's No. 1 Alvin Beck, 520 ft. from W line, 1,300 ft. from S line of Sur. No. 36 ..... Location.

C. S. Bowman's No. 1 Riddler, 1,000 ft. from S and W lines of 700-ac. tract, Block 4,311, Sur. No. 5 ..... Completed for 20 bbls.

Penn Oil Co.'s No. 1 Cooksey, 1,150 ft. to E line, 150 ft. to N line of survey, J. Riall Sur. ..... Drlg. water well.

Weibacher et al's No. 1 Ernst, 6,400 ft. S line, 900 ft. W line of J. Christopher Sur. ..... Rigging up.

Carl Bros. et al's No. 1 Gembler, 160 ft. N line, 170 ft. E line Gembler tract, C. Tejeda Sur. ..... T. D. 1,105 ft.; drlg. chalk.

CALDWELL COUNTY

W. E. Allaun's No. 1 Cosey, SW cor. of tract ..... Location.

W. E. Allaun's No. 2 McKean, 300 ft. W of No. 1 ..... Location.

Matthews et al's No. 1 Osteen, 150 ft. E of M.K.T. tracks, 150 ft. N of S line of lease, N. Kelley Sur..... T. D. 2,360 ft.; dry and abandoned.

J. T. Callahan's No. 2 W. H. Callahan ..... T. D. 2,230 ft.; drlg.

Batts et al's No. 1 E. P. Roefur ..... T. D. 40 ft.; set casing.

Hertz & Thomas' No. 1 Kelley, 1,961 ft. from NE line, 150 ft. from NW line of Kelley tract, J. A. Neil Sur. ..... Location.

Cargill et al's No. 1 Thomas, 1,505 ft. from E line, 150 ft. from NE cor. of A. W. Jordan tract, J. Roberts Sur. ..... Location.

CALHOUN COUNTY

The Texas Company's No. 1 Thomas in the J. D. Tilly Sur. ..... T. D. 5,063 ft.; fishing.

COMAL COUNTY

Caldwell & Lanier's No. 1 T. J. Byler, 175 varas from W line, 370 varas from N line of 320-ac. tract in the H.E.&W.T. No. 5,894 Sur. ..... T. D. 300 ft.; drlg. lime.

New Braunfels Oil & Gas Co.'s No. 1 Adolph Seidemann, 269 ft. to NE line, 470 ft. to NW line of farm in the A. M. Esneuricas 11-League Sur., 1 mile SE from New Braunfels ..... T. D. 1,570 ft.; standing.

DEWITT COUNTY

H. T. Roe's No. 1 Leinhardt ..... T. D. 2,170 ft.; shut down.

DUVAL COUNTY

Vacuum Oil Co.'s No. 1 Duval County Ranch Co., 3,143 ft. N line, 1,368 ft. S line, Sur. 220 ..... T. D. 1,722 ft.; oil sand; will test.

Sal Oil & Gas Co.'s (Southern Oil Co.) No. 2 Welder-Wood, 1,980 ft. E line, 2,490 ft. N line, Sur. 215 .... T. D. 2,500 ft.; standing.

Sloan et al's No. 1 Luby, SW cor. of Sur. 593 ..... Location.

S. R. C. Oil Co.'s No. 1 Duval County Land Co., Sur. 293 ..... Spudded.

EDWARDS COUNTY

Phillips Pet. Corp.'s No. 2 A. G. Holman, 320 ft. from N and E lines of SE of tract, C.C.S.D.&N.G.R.G. Sur. No. 25 ..... T. D. 5,525 ft.; drlg.

James Dalgish's No. 2 Peterson, 850 ft. N line, 1,100 ft. W line of Sec. 82, Blk. E in the H.E.&W.T. Sur.. Location.

James Dalgish-Morrow's No. 1 Peterson, NW cor. Sec. 82, Blk. E, H.E.&W.T.R.R., NE cor. of county in the H.E.&W.T.R.R. Sur. ..... T. D. 3,642 ft.; drlg.

FRIO COUNTY

Simms Oil Co.'s No. 1 ..... Location.

A. H. Wray's No. 1 Burns estate, 700 ft. N, 330 ft. E of C Sec. 123, Antone Hupzor ..... T. D. 1,270 ft.; drlg. gumbo.

GOLIAD COUNTY

Union Prod. Co.'s No. 12 George Ray, 2,350 ft. SW of NE line, 330 ft. NW of SE line, George A. Ray 400 ac. in the Wm. Southerland Sur. ..... T. D. 5,134 ft.; drlg.

A. G. Riemenschneider's No. 1 A. T. Fromme, 275 ft. from N line, 912 ft. W line of 300-ac. tract, P. Dexeter Sur. ..... T. D. 2,430 ft.; standing.

Gibson Oil Co.'s No. 1 Cyrus Parks, 3,000 ft. S and 2,500 ft. E of NW cor. of Parks ranch, Ferguson Sur. ..... Derrick.

GONZALES COUNTY

Mardon Oil Co.'s No. 1 Borrer, 150 ft. N and W in the James Stewart Sur., 5 miles NW from Waelder .... T. D. 1,850 ft.; shut down.

Mardon Oil Co.'s No. 1 Robinson ..... T. D. 3,284 ft.; waiting for orders.

Linden Pet. Corp.'s No. 1 Hensley, 650 ft. N line, 1,110 ft. W line of J. W. Hensley 100 ac. in the James Smith ..... T. D. 4,775 ft.; drlg.

Lake Oil Co.'s No. 1 A. V. Campbell ..... Rigging up rotary tools.

United North & South Dev. Co.'s No. 2 Preston, 1,050 ft. NE, 450 ft. NW of upper S or SW cor. of Oethkin one-third league, 900 ft. SE of Preston No. 1.... Location.

A. J. Keiffer et al's No. 1 B. B. Dix, 550 ft. W of E line, 2,775 ft. N of S line (Guadalupe River) in the Ira Nash Sur., 4 miles SE from Darst Creek ..... T. D. 2,816 ft.; coring.

GUADALUPE COUNTY

Guy Lewis' No. 1 Arno Link ..... T. D. 847 ft.; standing.

J. S. Suttle's No. 2 A. Baenzinger, 40 ft. E line, 150 ft. S line of tract in the A. O. Mansola Sur., 5½ miles S from Seguin ..... T. D. 1,440 ft.; drlg. marl.

Grayburg Oil Co.'s No. 2 Wells, 5,730 ft. E line, 2,490 ft. S line of NE cor. of Wells tract in the James D. Baume Sur., 6 miles SW from Darst Creek ..... T. D. 3,383 ft.; drlg. Taylor.

Brown Hinds et al's No. 1 George Altzger, 1,300 ft. from SE line, 1,100 ft. from SW line of 120-ac. tract in A. Mansola Sur. ..... T. D. 1,975 ft.; shut down in Del Rio.

Ray Oil Co.'s No. 1 R. Felsing, 300 ft. NW line, 450 ft. NE line 120-ac. tract in the M. Baker Sur. ..... T. D. 900 ft.; drlg. Del Rio.

Miller & Calhoun's No. 1 Lindenberger, 750 ft. from E line, 650 ft. from S line of 250-ac. tract ..... T. D. 995 ft.; drlg.

Cranfill & Reynolds' No. 1 Meyer, 150 ft. S and E lines 100-ac. tract, J. Canter Sur. ..... Location.

O. K. Emerson's No. 1 C. A. Phillips, center of 80-ac. tract, Velda Sur. ..... Location.

HAYS COUNTY

Hailey & Whittington's No. 1 Heidenrich ..... T. D. 735 ft.; shut down.

San Marcos Oil & Gas Co.'s No. 1 A. H. Alford ..... T. D. 145 ft.; standing.

JACKSON COUNTY

The Texas Company's No. 1 Mitchell, 1,750 ft. E, 880 ft. N of SW cor. Ewing Sur. ..... T. D. 6,044 ft.; drlg. sand.

JIM HOGG COUNTY

Cole Petroleum Co.'s No. 1 Allen, 150 ft. from W line, 336 ft. from N line, Blk. 7, Sur. No. 23 ..... Location.

Wm. H. Barnhart's No. 1 McCampbell, 450 ft. to W line, 150 ft. to N line, Lot 33, Barnhart Subd., Los Viboritas grant ..... T. D. 150 ft.; drlg.

E. E. Watts' No. 1 Gomez, 4,200 ft. to N line, 1,400 ft. to E line of Sur. 125 ..... T. D. 390 ft.; drlg.

JIM WELLS COUNTY

J. Walsh et al's No. 1 W. D. Wade, 1,035 ft. NE line, 300 ft. NW line of N cor., Lot 1, Blk. C, W. H. Bode Subd. ..... T. D. 210 ft.; set 10-in. surface csg.; waiting on cement.

KARNES COUNTY

Clayton & Pierce's No. 1 Barnett in the Alex Hunter Sur., 6 miles N of Karnes City ..... T. D. 2,916 ft.; waiting on title.

J. F. Morrissey et al's No. 1 Ragsdale, 660 ft. SW of C of NE line of 170-ac. farm in the McCouli Sur. .... T. D. 1,380 ft.; resumed drlg. (corrected depth).

Dr. Hewitt's No. 1 W. E. Porter, 650 ft. from N line, 700 ft. from W line of 416-ac. tract in the Victor Blanco Sur., 8 miles SE from Runge ..... T. D. 2,700 ft.; shut down.

KENDALL COUNTY

Borgett et al's No. 1 Haag, W. Avery Sur. ..... T. D. 1,110 ft.; shut down.

A. S. Mowinkle's No. 1 Kaston, 150 ft. from N line, 150 ft. from E line of tract, Sur. No. 724, 9 miles due W of Kendalia ..... T. D. 1,300 ft.; drlg. lime.

Sitten et al's No. 1 Garvin, C of NE of D. L. Richardson Sur. in the D. L. Richardson Sur., 1 mile NE from Kendalia ..... T. D. 800 ft.; standing.

Dickinson et al's No. 1 Edmondson, 150 ft. from S line, 350 ft. from W line of tract in the J. O. Blair No. 72 Sur., 1 mile NW from Kendalia ..... T. D. 40 ft.; spudded in and shut down.

Dixon Oil Co.'s No. 1 Ottmer Behr, W of H.T.&B.R.R. Sur., 3½ miles SE from Sisterdale ..... T. D. 2,200 ft.; drlg. lime.

P. B. Sterling's No. 1 R. J. McCrocklin, 1,350 ft. from N line, 250 ft. from W line of the B. G. Owens Sur., 4 miles W from Kendalia ..... T. D. 845 ft.; preparing to drill in

R. M. Perkins' No. 1 J. Lawhon, Sec. 10, 2,475 ft. E line, 1,488 ft. S line ..... T. D. 600 ft.; fishing.

Permian Basin Oil Co.'s No. 1 Boles, S.A.&M.G. Ry. Sur. No. 542½ ..... Moving in machinery.

Hardy Sitton's No. 1 McMillan, south central part of 180-ac. lease, B. Williams Sur. ..... Location.

KERR COUNTY

Evans et al's No. 1 Love Ranch, 100 ft. from S line Sur. 1,597, 1,000 ft. E of W line of J. Martinez No. 1,594 Sur. ..... T. D. 1,500 ft.; drlg.

KLEBERG COUNTY

Bowen & Sarles' No. 1 Robert, H. Simmons in the A. Houston Sur. No. 611, Sec. 7, King Subd., 150 ft. out of NW cor. of SW ..... T. D. 1,580 ft.; shut down.; W.O.C.

KINNEY COUNTY

Magnolia Pet. Co.'s No. 1 Whitehead-Wardlaw, 2,640 ft. W line and S line of Melton Valdez grant ..... T. D. 3,160 ft.; drlg.

Mardon Oil Co.'s No. 2 Jim Clamp ..... T. D. 2,714 ft.; test sand at 1,389 ft.

A. Blume et al's No. 2 Herbst, 1,731 ft. W and S lines of Sur. in the Poindexter-Burns Sur. ..... T. D. 275 ft.; shut down.

KIMBLE COUNTY

Lindley Bros.' No. 1 Anderson, Sec. 178, Mubenger Sur... T. D. 990 ft.; shut down.

Dixie Oil Co.'s No. 1 Bodel, 900 ft. W of N line of Sec. 440, in Section 80, in the J. S. Patterson Sur. ..... Reported in error.

C. L. Bryant et al's No. 1 Lambert, 7,700 ft. N and W lines of F. Lotta Sur. ..... T. D. 850 ft.; drlg.

LIVE OAK COUNTY

Catlett & O'Neil's No. 1 Pat Pugh, 620 ft. S line, 150 ft. E line of Pugh tract, Abstract 189, in the E Gomez Sur. No. 253, 6 miles N from Dinero ..... Location abandoned.

Jacob, Buzzini & Pickett, Inc.'s No. 1 C. E. Kay, in the Bridgett Fadden Sur., 3 miles E from George West.. Drlg. water well.

Houston Oil Co.'s No. 1 D. W. Snyder, 630 ft. from S line, 150 ft. from E line of Snyder tract, T. E. Garner Sur. ..... Clearing location.

O. Stalley et al's No. 1 Nichols, 2,000 ft. from W line, 500 ft. from S line in the Ayers Sur. ..... Location.

Illinois Exploration Synd.'s No. 1 Reeves-Brown, 1,300 ft. S of Sellers tract, 1,800 ft. E of Ry. ..... Derrick.

Penn Oil Co.'s No. 1 Lyne, 900 ft. to W line, 330 ft. from S line of Sec. 69 on Devonian block ..... T. D. 1,890 ft.; drlg.

LEE COUNTY

Burt et al's (M. D. Rickett) No. 1 R. C. Sanders ..... T. D. 2,841 ft.; drlg. shale.

A. H. Wheeler and associates' No. 1 fee, 14 miles NE from McDade, Blk. 47, Donohoe Sur. ..... T. D. 1,270 ft.; drlg. shale.

J. P. Perry and others' No. 1 W. H. Thomas ..... T. D. 875 ft.; shut down.

McMULLEN COUNTY

Mogul Pet. Co.'s No. 1 Martin, 150 ft. NW line, 150 ft. to SW line of E. Melon No. 212 Sur. ..... T. D. 241 ft.; shut down.

Sheree, Brodie and Emick's No. 1 Shiver, Henry Brewer Sur. ..... Rigging up.

MAVERICK COUNTY

Rycade Oil Corp.'s No. 6 Chittim, 1,445 ft. from S, 320 ft. from W of Sec. 116, Blk. 7, I.&G.N. Sur. ..... T. D. 3,475 ft.; standing.

Rycade Oil Corp.'s No. 5 Chittim, 600 ft. W of No. 3 Chittim, 500 ft. E line, 225 ft. from S line of SE Sec. 115, Blk. 7, in the I.&G.N. Sur. ..... T. D. 4,685 ft.; standing.

Rycade Oil Corp.'s No. 5 Sullivan, in C of Sec. 82, Blk. 7, in the I.&G.N. Sur. ..... T. D. 7,092 ft.; fishing.

MEDINA COUNTY

Pat Armstrong's No. 1 C. W. Butts, in George C. Hanson Sur. ..... T. D. 1,918 ft.; dry and abandoned.

B. F. Newhaus et al's No. 1 Fusselman, 200 ft. E and S lines of tract (320-ac.) in the M. Castro Sur. ..... T. D. 1,814 ft.; dry and abandoned.

National Oil Co.'s No. 1 Howard, 1,750 ft. E of W line, 1,854 ft. N of S line of survey in the John George Sur. No. 9, 10 miles S of Dunlay ..... T. D. 1,645 ft.; bailing.

Caldwell et al's No. 1 L. W. Burrell ..... T. D. 2,167 ft.; fishing at 518 ft.

Donaldson Oil & Dev. Co.'s No. 2 Hillenmeyer, James Hillenmeyer No. 25 Sur., 500 ft. to E line of survey, 150 feet to S line of N half of survey ..... T. D. 200 ft.; shut down.

Pat Armstrong's No. 1 Crawford, 1,389 ft. N line, 2,550 ft. E line of survey, 478.6 miles W of Devine ..... T. D. 2,252 ft.; drlg.

Lyuko Co.'s No. 1 Medina Valley Irrigation, 2,800 ft. to S line, 2,250 ft. to E line of E. Reischer Sur. No. 509. T. D. 686 ft.; drlg. lime.

United North & South Dev. Co.'s No. 1 Little, S from D'Hanis and near S line of county ..... T. D. 1,580 ft.; drlg.

Service Oil & Gas Co.'s No. 1 H. G. Henslee, 500 ft. from NW line, 400 ft. from NE line of 50-ac. tract, Valdez Sur. ..... Location.

MILAM COUNTY

Rheubotham & Tate's No. 1 Johnson, 325 ft. from N line, 250 ft. from W line of 40-ac. tract, D. Robinson Sur. ..... Derrick.

NUECES COUNTY

Independent Oil & Gas Co.'s No. 1 Baldwin, 330 ft. each way out of NE of the J. C. Russell Subd., Blk. 11, 3 miles W from Corpus Christi ..... T. D. 4,318 ft.; drlg.
Houston Oil Co.'s No. 1 Morgan, 105 ft. N of C of tract. Laying water line.

REAL COUNTY

McGinley Corp.'s No. 1 Haby, C of SW Sec. 175 ..... Spudded.

SAN PATRICIO COUNTY

Magnolia Pet. Co.'s No. 1 Freeman, 660 ft. S and W lines of NW half of 80-ac. tract, Sec. 57 in the E. J. McGloin Sur. ..... T. D. 5,526 ft.; rigged up to deepen.
J. L. Kennedy's No. 1 McRae, 1,170 ft. NW of the C of the SE line of 500-ac. tract ..... Rigging up.
George B. Pickett's No. 1 Baldwin, 900 varas due E of Denton, 1,200 ft. S of the SE cor. of O'Neil's Sur., Abstract 211 ..... T. D. 4,012 ft.; moving in heavy rig to go to 6,000 ft.
Saxet Oil Co.'s No. 1 Carroll, 800 ft. N line, 130 ft. to W line, Lot 32-A, Sec. 32 of the fourth subd., Taft farms ..... Moving in tools.
Union Prod. Co.'s No. 4 Welder, 3,000 ft. N line, 4,500 ft. E line of tract in the E. Portillo Sur. ..... T. D. 4,000 ft.; drlg.
G. B. Peterman et al's No. 1 Crow, 150 ft. from S line, 170 ft. from W line of Sec. 24 of the Fulton-Coleman Pasture Lands, J. H. Paul Subd. ..... T. D. 3,800 ft.; drlg.
G. B. Peterman et al's No. 1 Foster, 150 ft. from E line, 1,420 ft. from N line of Blk. 5 of the Welder-Coleman-Fulton Subd., 3½ miles W from Sinton ..... Location.
LaFeria Oil & Gas Co.'s No. 1 C. C. Smith, in J. C. White Sur., 690 ft. to N line, 350 ft. to E line ..... T. D. 4,067 ft.; shut down.

STARR COUNTY

Kush Expltn. Co.'s No. 1 Kelsey-Bass, 150 ft. to W line, 750 ft. to N line, Por. 75, Blk. 9 ..... T. D. 520 ft.; drlg.
J. L. Smith's No. 1 Welch, Pedernal Sur. ..... T. D. 925 ft.; show gas in sand.
Virginia Oil Co.'s No. 1 Kelsey-Bass, 150 ft. to S line, 1,850 ft. to W line, Blk. 6, Por. 75, Courargo ..... T. D. 50 ft.; drlg.

TRAVIS COUNTY

Fox Oil Co.'s No. 1 W. Fuchs ..... T. D. 1,012 ft.; shut down.
Fort Bend Oil Co.'s No. 1 M. Engleman, 450 ft. N line, 150 ft. W line of 108-ac. tract, J. H. Denson Sur. .... Rigging up.

UVALDE COUNTY

E. Anglin et al's No. 1 U.P.P., 1,550 ft. from NW line, 7,450 ft. to NE line of Manual Leal Sur., 10 miles SE from Uvalde ..... T. D. 1,194 ft.; drlg. in lime.
Waldrop & Welch's No. 1 E. R. Edmonds, 1,750 ft. NW, 7,240 ft. W of Sec. 71, in the A. Gomez Sur., 8 miles S of Uvalde ..... T. D. 1,193 ft.; moving in heavier rig.
Phantom Oil Co.'s No. 1 Claudt, Sec. 611 ..... T. D. 2,450 ft.; fishing.

VICTORIA COUNTY

The Texas Co.'s No. 1 A. M. McFadden, 1,550 ft. N and E lines of H. Bonny Sur. ..... T. D. 4,023 ft.; tested salt water; drlg.

WEBB COUNTY

J. L. Elliott's No. 1 Esperanza Land & Stock Co., 950 ft. from N line, 2,231 ft. E line, Sur. 815 ..... T. D. 1,450 ft.; standing.
O. W. Killam's No. 1 Slator, 800 ft. to NW line, 300 ft. to SW line, Blk. 70, Slator pasture, Borrego grant .. T. D. 1,790 ft.; standing.

WILLIAMSON COUNTY

Texas Oil & Gas Development Co.'s No. 1 Gervert & Allison, 9 miles NE from Taylor ..... T. D. 40 ft.; shut down.

ZAPATA COUNTY

T. H. Ward's No. 1 Uribe, 150 ft. NW line, 150 ft. SW line, Blk. 8 Subd., Share 7, Partition No. 6, T. Uribe Partition of Jose V. Borrego Sur. ..... Rigging up.
B. F. Nixon's No. 1 A. Gutierrez, 170 ft. S line, 332 ft. E line, Lot 5, Blk. 8, Partition 10, Borrego grant .. T. D. 50 ft.; standing.
Penny Prod. Co.'s No. 1 Juan V. Cuellar, Jr., et al, 175 ft. NE line, 175 ft. SE line Poppas Subd., Porcion 33 and 34, Blk. 1, Sur. 2 ..... T. D. 510 ft.; drlg.
National Oil Co.'s No. 1-A Adams, 150 ft. N of No. 1, Blk. 4, Sec. 11, Adams Subd., Borrego grant ..... T. D. 700 ft.; setting csg.
National Oil Co. of Delaware's No. 1 Luther, 617 ft. NW line, 96 ft. NE line, Blk. 97, Da Pron Subd., Porcion 6 ..... T. D. 380 ft.; drlg.
National Oil Co. of Delaware's No. 2 Luther, 64 ft. NE line, 272 ft. SE line, Blk. 13, Sur. No. 7, Share 8, Borrego grant ..... T. D. 300 ft.; drlg.
Mackinzie and Tallmadge's No. 1 Trevino, 400 ft. SE line, 200 ft. NE line, Blk. 6, Sur. No. 4, Porcion 2 and 3 ..... T. D. 30 ft.; standing.
F. M. Blair & Son's No. 1 Gutierrez, 150 ft. from NW line, 660 ft. from SW line, Blk. 2, Blair Subd., Comitas grant ..... T. D. 720 ft.; drlg.
Lincoln Oil & Gas Co.'s No. 1 Gutierrez, Blk. 23, Subd., La Huerta grant ..... T. D. 352 ft.; drlg.

ZAVALA COUNTY

Krebs & Davis' No. 1 Weatherby, E center of NW of Sec. 44, Blk. A, Adams, Beatty & Mouton Sur., 4 miles E from Loma Vista ..... T. D. 1,782 ft.; drlg.
Ed Anglin's No. 5 Pryor ..... T. D. 1,034 ft.; drlg. (cor. depth).
Texas Gas Utilities Co.'s No. 1 Ike T. Pryor, Jr. ..... T. D. 1,211 ft.; tested gas, estimated 20,000,000 ft.
Ed Anglin's No. 6 La Pryor ..... Location.

GULF COAST FIELDS AND WILDCATS

(Continued from Page 57)

HUMBLE—HARRIS COUNTY

Cullen West's No. 3 Burt, east ..... Location.
Cullen West's No. 5 Lee, south ..... Moving in.
Houtex Production Co.'s No. 1 Burgess ..... Location.
LaRue trustee's No. 1 Crane, northwest ..... Derrick.
M. LaRue, trustee's No. 1 Tuffly, northwest ..... Location.
Raybourn et al's No. 1 Cherry, west ..... Abandoned 5,070 ft.
Rio Bravo Oil Co.'s No. 7 Fee, west ..... Drlg. sand and boulders 3,320 ft.
Sun Oil Co.'s No. 11 Bender, west ..... No report.
Sun Oil Co.'s No. 13 Bender, west ..... No report.
Sun Oil Co.'s No. 14 Bender, west ..... No report.
Sun Oil Co.'s No. 49 River, north ..... Total depth 4,486 ft.; strengthening hole.
The Texas Company's No. 2 Atlantic & Gulf, east ..... Drlg. shale 4,598 ft.
The Texas Company's No. 2 Fee ..... Drlg. brown sticky shale and boulders 4,045 ft.
The Texas Company's No. 25 House, northeast ..... Drlg. shale 2,683 ft.
The Texas Company's No. 43 Stevenson, east ..... Location.
West Production Co.'s No. 3 Foster, north ..... Cmtd. csg. 4,200 ft.
E. M. Wilson's No. 5 Pickins ..... Derrick.

PIERCE JUNCTION—HARRIS COUNTY

Gulf Production Co.'s No. 1 Manchester Corp. ..... Set 30 ft. screen 3,720 ft.; comp. flowing 500 bbls. 31.8 gravity oil, 9/32-in. choke.
Gulf Production Co.'s No. 2 Manchester Corp. ..... Derrick.
Navarro Oil Co. and Texas Exploration Co.'s No. 20 Dooley ..... Derrick.
Rio Bravo Oil Co.'s No. 14-A Settegast ..... Fishing.
Rio Bravo Oil Co.'s No. 20-A Settegast ..... Drlg. sandy shale 5,031 ft.
Saxet Oil Co.'s No. 8 Herman estate ..... Oil sand 4,541 ft.; cmtd. 9⅝-in. csg. 4,514 ft.
Elvin Tilton's No. 1 G. P. Co.-Jones fee ..... Drlg. 2,200 ft.
Warner-Quinlan's No. 1 Minchen ..... Drlg. gumbo 1,929 ft.

LIBERTY—LIBERTY COUNTY

Empire Gas & Fuel Co.'s No. 13 O'Brien ..... Drlg. shale 4,409 ft.

BIG CREEK—FORT BEND COUNTY

Gulf Production Co.'s No. 60 Davis ..... Drlg. gumbo and lime 2,269 ft.
Navarro Oil Co.'s No. 5 Davis ..... Drlg. lime and shale 2,700 ft.

LOST LAKE—CHAMBERS COUNTY

Pure Oil Co.'s No. 5 Lost Lake ..... Topped hard sand showing oil and gas 5,119 ft.; coring 5,126 ft.

NASH—BRAZORIA COUNTY

Rycade Oil Corp.'s No. 27 Wisdom ..... Drlg. hard sandy lime 4,942 ft.

SARATOGA—HARDIN COUNTY

Rio Bravo Oil Co.'s No. 94-A Cotton ..... Drlg. sand and shale 499 ft.

GOOSE CREEK—HARRIS COUNTY

Humble Oil & Ref. Co.'s No. 78 Simms-Smith ..... Drlg. sand and shale 4,969 ft.

SPINDLETOP—JEFFERSON COUNTY

Unity Oil Co.'s No. 101 McFaddin ..... No report.
Yount Lee Oil Co.'s No. 17 McFaddin (workover) ..... Drlg. sand 3,520 ft.
Yount Lee Oil Co.'s No. 139 McFaddin ..... To test oil sand 5,604 ft.
Yount Lee Oil Co.'s No. 141 McFaddin ..... Drlg. shale 3,400 ft.

NORTH DAYTON—LIBERTY COUNTY

Victor Oil Co.'s (V. H. Borsodi) No. 2 Gulf ..... Set 29 ft. 4½-in. screen 5,066 ft., comp. flowing 500 bbls. 42 gravity oil.
Saxet Oil Co.'s No. 3 Wilhite ..... Drlg. 4,857 ft.
Harrison Oil Co.'s No. 1 Gulf fee ..... Drlg. shale 4,900 ft.
Harrison Oil Co.'s No. 1 Jones ..... Location.

HIGH ISLAND—GALVESTON COUNTY

Gulf Production Co.'s No. 10 Smith ..... Drlg. shale and lime 4,934 ft.
Marrs McLean's No. 18 Cade ..... Total depth 4,177 ft.; sidetracking; shale and lime 3,132 ft.
Marrs McLean's No. 19 Cade ..... Rig.

ORCHARD—FORT BEND COUNTY

Gulf Production Co.'s No. 25 Moore ..... Drlg. shale and lime 1,996 ft.
Gulf Production Co.'s No. 26 Moore ..... Drlg. gumbo 1,674 ft.

HULL—LIBERTY COUNTY

Republic Production Co.'s No. 30 Dolbear ..... Comp. flowing 60 bbls. oil 2,440 ft.
The Texas Company's No. 3 Barrow ..... Rig.

PORT NECHES—ORANGE COUNTY

Gulf Production Co.'s No. 1 W. H. Starks ..... Drg. shale 5,993 ft.
The Texas Company's No. 2 Starks ..... Drlg. sand and shale 5,050 ft.

CLAY CREEK—WASHINGTON COUNTY

Sun Oil Co.'s No. 5 Hunt ..... Abandoned.
Sun Oil Co.'s No. 4 Janner ..... Total depth 2,677 ft.; reaming.

SOUR LAKE—HARDIN COUNTY

The Texas Company's No. 307 Fee ..... Drlg. gumbo 1,304 ft.

BATSON—HARDIN COUNTY

East Batson Oil Co.'s No. 1 Gulf ..... Comp. pumping 6 bbls. net oil 519 ft.

ESPERSON—LIBERTY COUNTY

Cranfill-Reynolds No. 6 Esperson ..... Rigging up to deepen.
Cranfill-Reynolds Oil Co.'s No. 16 Esperson ..... Oil sand 3,325 ft.; cemented csg.
Cranfill-Reynolds Oil Co.'s No. 4 Moores Bluff ..... Comp. flowing 300 bbls. 2,306 ft.
Cranfill-Reynolds Oil Co.'s No. 5 Moores Bluff ..... Drlg. gumbo 100 ft.
Cranfill-Reynolds Oil Co.'s No. 1 Voydak (workover) .... Pulling screen to deepen.
Yount Lee Oil Co.'s No. 3 Moores Bluff ..... Killed gas blowout 7,592 ft.; trying to pull stuck drill stem.

HANKAMER—LIBERTY COUNTY

Gulf Production Co.'s No. 1 Ezzell ..... Sand and shale showing oil 3,983 ft.
Gulf Production Co.'s No. 9 Boyt ..... Derrick.

WEST COLUMBIA—BRAZORIA COUNTY

The Texas Company's No. 80 Hogg (workover) ..... To deepen.

BOLING—WHARTON COUNTY

C. S. Thomas' No. 1 Volney ..... Shut down 235 ft.
C. S. Thomas' No. 1 Taylor ..... Drlg. shale 1,506 ft.

REFUGIO—REFUGIO COUNTY

Houston Oil Co.'s No. 1 Rooke ..... Drlg. hard sand 3,758 ft.
Houston Oil Co.'s No. 1 City, Blk. 59 ..... Drlg. shale 6,420 ft.
Houston Oil Co.'s No. 1 O'Connor ..... Fishing drill pipe 5,371 ft.
Houston Oil Co.'s No. 1 West ..... Oil sand 6,388-97 ft.; comp. spraying 25 bbls. gasoline, 2,350 lbs. pressure, on ⅝-in. choke.
Houston Oil Co.'s No. 1 Rose Lambert ..... Total depth 5,922 ft.; plugged to 5,000 ft.
Houston Oil Co.'s No. 2 Rose Lambert ..... Set 5 joints screen 5,890 ft.; comp. flowing 625 bbls. 29.3 gravity oil.
Houston Oil Co.'s No. 1 Johnson, Blk. 63 ..... Sand showing oil 5,636 ft.; cmtd. csg.
Independent Oil & Gas Co.'s No. 1 Rose Lambert ..... Drlg. shale 5,448 ft.
Independent Oil & Gas Co.'s No. 6 Jerry Reilly (workover) ..... Drlg. shale 6,996 ft.
Edwin M. Jones' No. 8-A J. F. B. Heard ..... Location.
Larco Oil Co.'s No. 6 Strauch ..... Gumbo 422 ft.; cmtd. 10-in. csg.
Luling Oil & Gas Co.'s No. 1 Talman, Blk. 104 ..... Gumbo 1,200 ft.; cmtd. 12½-in. csg.
Luling Oil & Gas Co.'s No. 1 J. W. Kay ..... Fishing drill pipe 4,928 ft.
Luling Oil & Gas Co.'s No. 1 West ..... Coring gas sand 6,410 ft.
Mission Drilling Co.'s No. 1 Ben Shelton ..... Drlg. shale 3,490 ft.
Mission Drilling Co.'s No. 1 Moss-Heard, Block 11 ..... Drlg. shale and lime 5,853 ft.
Mission Drilling Co.'s No. 1 O'Brien (wrkover) ..... Standing 5,471 ft.
Mission Drilling Co.'s No. 1 Joe Shay, Block 6 ..... Pulling screen to deepen 5,477 ft.
Moody-Seagraves Prod. Co.'s No. 1 Linney ..... Gumbo 1,505 ft.; cmtd. 12½-in. csg.
Moody-Seagraves Prod. Co.'s No. 1 Tom Heard, Blk. 3... To deepen 5,483 ft.
Moody-Seagraves Prod. Co.'s No. 2 O'Brien ..... Comp. spraying 75 bbls. 57 gravity oil; sand 5,690-98 ft.
Moody-Seagraves Prod. Co.'s No. 3 O'Brien ..... Derrick.
Moody-Seagraves Prod. Co.'s No. 1-A St. John ..... Drlg. sandy shale 4,371 ft.
Moody-Seagraves Prod. Co.'s No. 1 Strauch, Block 65 .... Gumbo 1,510 ft.; cmtd. 12½-in csg.
Moody-Seagraves Prod. Co.'s No. 5 Morgan-O'Connor.... Rig.
Moody-Seagraves Prod. Co.'s No. 6 Morgan-O'Connor.... Location.
Ed Price's No. 2 Missouri River ..... Drlg. rock 790 ft.
Pearson Properties, Inc.'s No. 1 Hornburg ..... Derrick.
Pearson Properties, Inc.'s No. 3 Ryals ..... Set 16 ft. screen 5,488 ft.; testing.
Pittsburg Refugio Oil Co.'s No. 2 Terrell ..... Drlg. sandy shale 3,830 ft.
Saxet Oil Co.'s No. 12 Clint Heard ..... Abandoned 6,442 ft.
Saxet Oil Co.'s No. 1 L. H. Johnson, Blk. 11 ..... Location.
Saxet Oil Co.'s No. 1 Fox heirs (workover) ..... Coring gas sand 3,693 ft.
Saxet Oil Co.'s No. 3 Ryals ..... Swabbed salt water 5,487-95 ft.
L. L. Smith's No. 1 Powers, Blk. 85 ..... Location.
L. L. Smith's No. 1 Rodgers ..... Derrick.
Union Producing Co.'s No. 3 M. F. Lambert ..... Total depth 5,925 ft.; rigging up to workover.
Union Producing Co.'s No. 10 Fannie Heard ..... Gumbo 467 ft.; cmtd. 10-in. csg.
Union Producing Co.'s No. 6 O'Brien ..... Derrick.
Union Producing Co.'s No. 5 Powers ..... Location.
Union Producing Co.'s No. 5 Mitchell ..... Rig.

SOUTH LOUISIANA FIELDS

LOCKPORT—CALCASIEU PARISH

Union Sulphur Co.'s No. 2 Moss ..... Tested salt water 5,055 ft.; pulled screen; standing.
Union Sulphur Co.'s No. 1 Martha Moss ..... Drlg. sandy shale 5,867 ft.
Vacuum Oil Co. and Gulf Ref. Co.'s No. 28 Miller ..... Drlg. water sand 4,848 ft.
Vacuum Oil Co. and Gulf Ref. Co.'s No. 29 Miller ..... Drlg. gumbo 3,230 ft.
Vacuum Oil Co.'s No. 30 Miller ..... Derrick.
Vacuum Oil Co.'s No. 31 Miller ..... Location.
Vacuum Oil Co.'s No. 6 Bayou State ..... Drlg. sandy shale 3,745 ft.
Yount Lee Oil Co.'s No. 1 Miller ..... Drlg. sandy lime 5,677 ft.

HACKBERRY—CAMERON PARISH

Calcasieu Oil Co.'s No. 6 Caldwell ..... No report.
Duhon Oil & Mineral Co.'s No. 1 Koonce ..... Abandoned 140 ft.
Federal Petroleum Co.'s No. 1 Hebert ..... Drlg. 7,030 ft.
The Texas Company's No. 7 State ..... Drlg. shale and sand 4,156 ft.

Don't: break your hold and lose the slips »»don't back off or unscrew»» don't strip the tubing . . . . . .

When fishing for broken sucker rods use "Oilwell" Releasing Sucker Rod Sockets and avoid these costly operations.

See folder No. 430

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OIL WELL SUPPLY CO.

Yount Lee Oil Co.'s No. 30 State ..... Drlg. sand and shale 3,346 ft.
Yount Lee Oil Co.'s No. 31 State ..... Comp. flowing 2,000 bbls. 3,894 ft.
Yount Lee Oil Co.'s No. 2 Portia ..... ig. shale 4,520 ft.

JENNINGS—ACADIA PARISH

Yount Lee Oil Co.'s No. 9 Houseric Latiere ..... Sandy shale 7,172 ft.; csg. cmtd.
Yount Lee Oil Co.'s No. 7 Crowley ..... Drlg. 4,641 ft.

VINTON—CALCASIEU PARISH

Emerson-Moore's No. 1 Gray (workover) ..... ig. 3,200 ft.
Gorsat Oil Co.'s No. 1 Clement Lyons ..... Rig.
Gulf Refining Co.'s No. 4 Gardner ..... d salt water 3,498 ft.; standing.
Lucky Ten Oil Co.'s No. 1 Lizzo ..... Set screen 3,210 ft.
Vinton Petroleum Co.'s No. 9 Gray ..... Drlg. sand and shale 3,440 ft.
Wilson-Broach's No. 4 Wilson ..... ver 3,491 ft.

BAYOU BOUILLON—ST. MARTIN PARISH

Rycade Oil Corp.'s No. 5 Atchafalaya (workover) ..... ning screen to deepen.
Rycade Oil Corp.'s No. 1 Woodyard Lake ..... Drlg. shale and hard sand 5,720 ft.
Rycade Oil Corp.'s No. 4 State ..... Derrick.

STARKS—CALCASIEU PARISH

Adams Oil Co.'s No. 1 Roderick ..... o report.
J. O. Davis' No. 1 Industrial ..... No report.
Gulf Refining Co.'s No. 1 Industrial ..... Drlg. 100 ft.
J. G. Sutton et al's No. 1 Industrial ..... Abandoned 1,489 ft.

SWEET LAKE—CAMERON PARISH

Magnolia Petroleum Co.'s No. 1 Sweet Lake ..... 6,700 ft.

EDGERLY—CALCASIEU PARISH

Rex Petroleum Co.'s No. 12 Hunter ..... andoned 5,080 ft.

MISCELLANEOUS WILDCATS

TEXAS

AUSTIN COUNTY

O'Hara et al's No. 1 Schrader ..... Shut down for fuel 1,794 ft.

BRAZORIA COUNTY

The Texas Company's No. 1 Ewin, Harvey Little Sur..... Total depth 7,140 ft.; fishing.
The Texas Company's No. 1 J. H. Murdock, Fresno..... Drlg. gumbo 1,506 ft.; reaming.
Mills Bennett Production Co.'s No. 1 Random, Allen..... Total depth 5,363 ft.; rigging up to work over.
Mills Bennett Production Co.'s No. 1 Poole, Allen ..... Drlg. sand rock 3,467 ft.
Mills Bennett Production Co.'s No. 2 Allen ..... Drlg. gumbo and lime 3,286 ft.
Faust et al's No. 5 Faust ..... Drlg. sand and shale 5,093 ft.
Freeport Sulphur Co.'s No. 2,001 Fee, Bryan Heights..... Drlg. lime rock 3,633 ft.
Layne et al's No. 7 Wisdom, Damond Mound ..... Cap rock 388-90 ft.; set screen; bailing.
Rucks & Patterson's No. 1 Hunter, southwest of Hoskins.. Abandoned 1,180 ft.
Rycade Oil Corp.'s No. 1 Seaburn, Stratton Ridge ..... Drlg. rock 2,551 ft.
Shell Petroleum Corp.'s No. 1 Haury-Danbury ..... Spudded.
Steel & Strickland's No. 1 Lockridge ..... Spudded and shut down.
United Oil Syndicate's No. 1 Moores, Francis Moore Sur.. Shut down 1,462 ft.

CALHOUN COUNTY

The Texas Company's No. 1 Thomas, J. P. Tilley Sur..... Drill stem showed salt water 5,063 ft.; drlg. deeper.

CHAMBERS COUNTY

Chicago Oil Corp.'s No. 1 Lawrence ..... Total depth 3,948 ft.; cmtd. csg.
Shell Petroleum Corp.'s No. 2 Herff, Moss Bluff ..... Drlg. shale 149 ft.
Pure Oil Co.'s No. 1 J. H. K. Ranch, Oyster Bayou..... Shut down for repairs 5,367 ft.
The Texas Company's No. 1 Jackson, T.&N.O. Sur., Sec. 17 ..... Abandoned 5,010 ft.

GRIMES COUNTY

Deering et al's No. 1 Munker, Darius Gregg Sur..... Drlg. shale 1,795 ft.
Deering & Noble's No. 1 Templeton, 6 miles south of Navasota ..... Drlg. shale and shell 2,997 ft.

HARDIN COUNTY

D. O. Speights' No. 1 Fee, near Batson ..... Drlg. sand and shale 2,824 ft.

HARRIS COUNTY

Baldwin and associates' No. 1 Kitzman, Cypress..... Shut down 4,247 ft.
Gulf States Oil Co.'s No. 1 Angsperger ..... Drlg. shale 1,260 ft.
Humble Oil & Ref. Co.'s No. 8 Warren, Hockley..... Drlg. sand and shale 3,593 ft.
Humble Oil & Ref. Co.'s No. 3 Minnotex, Mykawa..... Drlg. hard sand 4,873 ft.

JACKSON COUNTY

Jackson County Oil Syndicate's No. 8 Drushell, Edna..... Drlg. sand and shale 3,810 ft.
Jackson County Oil Syndicate's No. 2 Lee ..... Shut down 3,489 ft.
Warner-Quinlan's No. 1 Hungeford, Henry Smith Sur..... Location.

JEFFERSON COUNTY

Deep Test Oil Co.'s No. 1 McFaddin, Chaisson Sur..... No report.
Westbury Oil Co.'s No. 1 West, Choate Sur. ..... Drlg. gumbo 4,112 ft.

LIBERTY COUNTY

Gulf Production Co.'s No. 2 McFaddin, Moss Bluff ..... Drlg. shale 4,458 ft.
Humble Oil & Ref. Co.'s No. 1 Breeding, Moss Bluff..... Rig.
Humble Oil & Ref. Co.'s No. 1 Orlando Hylton, Moss Bluff ..... Drlg. shale and lime 3,488 ft.
Humble Oil & Ref. Co.'s No. 1 Sergent, Moss Bluff..... Rigging up.
Rycade Oil Corp.'s No. 1 Heiskell ..... Drlg. 493 ft.
Tucker et al's No. 1 Bell, Devers ..... Derrick.

MATAGORDA COUNTY

H. C. Cockburn's No. 2 Hawkins, Shepherds Mott..... Rig.
Empire Gas & Fuel Co.'s No. 1 Baker, Citrus Grove..... Drlg. blue shale 4,257 ft.

MONTGOMERY COUNTY

Price & Whitehead's No. 2 Guerges ..... Shut down 2,956 ft.

REFUGIO COUNTY

Blanco Oil Co.'s No. 1 Dorman ..... Shut down 3,120 ft.

VICTORIA COUNTY

Houston Oil Co.'s No. 1 McFaddin, C. O. Edwards Sur... Fishing 3,315 ft.
The Texas Company's No. 1 McFaddin, H. Bonny Sur..... Sticky shale 4,329 ft.; reaming.
Lion Oil & Ref. Co.'s No. 2 McFaddin, M. Traviers Sur.... Drlg. shale 5,310 ft.
Newton et al's No. 1 West ..... Shut down 1,550 ft.

WALKER COUNTY

Texas State Oil Co.'s No. 2 Foils, H.&T.C. Sur., Abstract 287 ..... Drlg. shale 3,206 ft.

WALLER COUNTY

W. P. Morris' No. 1 Chapman, Donoho Sur. ..... Drlg. shale 3,490 ft.

WASHINGTON COUNTY

Clifton et al's No. 1 Pruiss, E. Alcorn Sur. ..... Drlg. shale 1,627 ft.

SOUTH LOUISIANA

CAMERON PARISH

Shell Petroleum Corp.'s No. 15 Watkins, Black Bayou.... Drlg. sticky shale 2,396 ft.
Shell Petroleum Corp.'s No. 1 State, Black Bayou..... Drlg. sandy shale 5,125 ft.
Vacuum Oil Co.'s No. 1 Cameron Meadows, Sec. 21-14s-13w ..... Drlg. sticky shale 5,002 ft.
The Texas Company's No. 6 State, Calcasieu Lake ..... Rigging up.

IBERIA PARISH

Lake Oil Co.'s No. 1 Ben White, Sec. 54-12s-7e..... No report.
Jefferson Oil Co.'s No. 9 Lake Peigneur, Jefferson Island. Rig.
Jefferson Oil Co.'s No. 10 Lake Peigneur, Jefferson Island ..... Location.
The Texas Company's No. 5 Vermilion Bay ..... Drlg. rock 6,528 ft.

IBERVILLE PARISH

Shell Petroleum Corp.'s No. 5 Wilbert, White Castle..... Drlg. sand and sandy lime 4,839 ft.
Standard Oil Co.'s No. 7 Wilbert ..... Derrick.
Standard Oil Co.'s No. 8 Wilbert ..... No report.
Standard Oil Co.'s No. 1 E. B. and S. P. Schwing, Bayou Blue ..... Drlg.
Standard Oil Co.'s No. 1 Baist Cooperage, Bayou Blue... Rig.
Standard Oil Co.'s No. 2 Case, Bayou Des Glaise..... Location.

JEFFERSON PARISH

Humble Oil & Ref. Co.'s No. 1 Delaware, Sec. 9-16s-23e... Drlg. sand 4,003 ft.

JEFFERSON DAVIS PARISH

Shell Petroleum Corp.'s No. 1 Heyd, Iowa ..... Location.
Vacuum Oil Co.'s No. 1-A DeVilbiss, Roanoke ..... Drlg. gumbo 3,191 ft.

LA FOURCHE PARISH

The Texas Company's No. 1 L.L.&E., Leesville ..... Total depth 5,448 ft.; sidetracking sandy shale 3,391 ft.

PLAQUEMINE PARISH

Gulf Refining Co.'s No. 1 Buras Levee Board ..... Location.
Humble Oil & Ref. Co.'s No. 2 Cockrell-Moran, Lake Grand Pcaille ..... Derrick.
Humble Oil & Ref. Co.'s No. 3 Cockrell, Lake Grand Pcaille ..... Cap rock 1,525-44 ft.; drill stem stuck; sidetracking.
The Texas Company's No. 4 State, Garden Island..... No report.

ST. MARTIN PARISH

The Texas Company's No. 2 Iberville Land ..... No report.
The Texas Company's No. 4 St. Martin, Hager ..... Derrick.

ST. MARY PARISH

The Texas Company's No. 1 South Coast, Sec. 41-14s-10e.. No report.

TERREBONNE PARISH

The Texas Company's No. 5 State, Bay St. Elaine..... Location.
The Texas Company's No. 4 State, Caillou Island..... Location.
The Texas Company's No. 5 State, Caillou Island..... Rig.
The Texas Company's No. 3 State, Dog Lake..... Drlg. sand and boulders 1,204 ft.
The Texas Company's No. 4 La. L. & E., Four Isle ..... Cmtd. 9⅝-in. csg. 3,656 ft.
The Texas Company's No. 2 La. L. & E., Bay Junop .... Drlg. lime and gumbo 2,946 ft.
The Texas Company's No. 6 State, Lake Pelto ..... Driving piling.
The Texas Company's No. 5 State, Lake Barre..... Drlg. hard rock 2,751 ft.
The Texas Company's No. 6 State, Lake Barre ..... Driving piling.
The Texas Company's No. 7 State, Lake Barre ..... Driving piling.

SOUTHWEST TEXAS FIELDS

(Continued from Page 58)

total depth 1,391 feet, temporarily abandoned.

Jennings-Muckleroy Pool—Zapata County

Edgington and Niles' No. 5 B Trevino, 150 feet from southeast line, 1,050 feet from southwest line, Block 4, Survey 65, location abandoned.

Smith Clark Co., Inc.'s (Skoglund and Maddox) No. 1 Montemayor, 150 feet from west line, 450 feet from north line, Block 5, Survey 63, total depth 2,312 feet, abandoned, dry.

NEW LOCATIONS

Randado Pool—Jim Hogg County

J. W. Pippin's No. 1 N. Hinnant, 150 feet from south line, 150 feet from west line, Block 11, Survey 147, derrick.

Jennings-Muckleroy Pool—Zapata County

Allied Oil & Gas Co.'s No. 17-A Trevino, 630 feet from northwest line, 661 feet from southwest line, Block 6, Survey 65, rigging up.

W. R. Shankle's No. 4 Gutierrez, 1,200 feet from northeast line, 2,989 feet from northwest line, Share 4, Fansler partition, Comitas grant, rigging up.

DRILLING ACTIVITY

Schoolfield-O'Byrne Pool—Duval County

Magnolia Petroleum Co.'s No. 1 Edge-Hahl, 150 feet from north line, 150 feet from west line, Survey 63, total depth 25 feet, drilling.

Randado Pool—Jim Hogg County

Cole Petroleum Co.'s No. 1 Wood, 802 feet from west line, 547 feet from southwest line, Block 16, Survey 82, derrick.

Henne-Winch-Farriss Pool—Jim Hogg County

South Texas Production Co.'s No. 1 R. Hinnant, 660 feet from east line, 660 feet from south line, Hinnant Subdivision, Share 5, Las Animas grant, rigging up.

Roma Pool—Starr County

The Texas Company's No. 5-A V. C. de Guerra, 675 feet from north line, 675 feet from east line, Share 305, Porcion 67, Jurisdiction of Mier, total depth 200 feet, drilling.

Schott Pool—Webb County

George S. Marshall's No. 2 Garcia, 1,170 feet from north line, 2,490 feet from east line, Survey 458, total depth 2,405 feet, sand 2,398-2,405 feet.

Reiser Pool—Webb County

O. W. Killam's No. 1 Villegas, Block 4, Survey 1,859, total depth 500 feet, drilling.

Carolina Texas—Webb County

Magnolia Petroleum Co.'s No. 1 Jones-Wright, 330 feet from south line, 330 feet from west line, Survey 674, total depth 3,950 feet, drilling.

Cole Field—Webb County

Trussel, Cezeaux, and Partee's No. 1 Bruni, 150 feet from northeast line, 300 feet from southeast line, Block 35, Adams Subdivision, Survey 10, total depth 2,475 feet, showing oil, gas and salt water.

Charco Redondo Pool—Zapata County

C. R. Moore and J. W. Moore's No. 1 Adela G. de Flores, 330 feet from northwest line, 330 feet from northeast line, E. M. Doty Oil & Gas Subdivision, Block 99, Charco Redondo grant, total depth 320 feet, standing, moving in heavier rig.

C. R. Moore and J. W. Moore's No. 2 Adela G. de Flores, 150 feet from northeast line, 150 feet from southeast line, E. M. Doty Oil & Gas Subdivision, Block 151, Charco Redondo grant, total depth 50 feet, standing.

Jennings-Muckleroy Pool—Zapata County

Alamo Drilling & Leasing Co.'s (Claggett) No. 5 Trevino, 150 feet from south line, 150 feet from east line, Block 1, Survey 66, spudded.

Alamo Drilling & Leasing Co.'s (Claggett) No. 6 Trevino, 450 feet from south line, 150 feet from east line, Block 1, Survey 66, location.

Allied Oil & Gas Co.'s No. 8-B Trevino, 520 feet from northwest line, 465 feet from east line, Block 20, Survey 65, total depth 1,255 feet, waiting for cement.

Allied Oil & Gas Co.-Allen and Morris' No. 7 Gutierrez, 4,263 feet from southeast line, 150 feet from northeast line, Share 4, Fansler partition, Comitas grant, total depth 1,256 feet, waiting for cement.

Same parties' No. 8 Gutierrez, 3,963 feet from southeast line, 150 feet from northeast line, Share 4, Fansler partition, Comitas grant, location.

Same parties' No. 9, Gutierrez, 3,663 feet from southeast line, 150 feet from northeast line, Share 4, Fansler partition, Comitas grant, location.

Edgington and Niles' (Gatlen and Matthews) No. 1 Garza, 150 feet from south line, 150 feet from west line, Block 18, Survey 413, rigging up.

Keene and Jackson's No. 1 M. Garza, 150 feet from northwest line, 150 feet from southwest line, Block 59, Subdivision Zorro ranch, Comitas grant, total depth 387 feet, drilling.

K. D. Harrison's No. 1 Pedro de los Sentos, 150 feet from southeast line, 150 feet from northeast line of Fansler 52-acre tract, Share 6, Comitas grant, total depth 1,180 feet, drilling.

Nordan and Morris-Grimm and Yakey's No. 1 S. Bustamente, 990 feet from northeast line, 150 feet from northwest line, Share 34, Fansler partition, Comitas grant, location.

W. R. Shankle's No. 8 M. Trevino, 1,050 feet from northwest line, 828 feet from southwest line, Block 15, Survey 65, spudded.

W. R. Shankle's No. 9 M. Trevino, 750 feet from northwest line, 828 feet from southwest line, Block 15, Survey 65, location.

S. R. C. Oil Co.'s No. 1 F. Cuellar, 150 feet from northwest line, 150 feet from northeast line, Block 7, Survey 65, derrick.

Same company's No. 12-B Trevino, location.

Same company's No. 14-B Cuellar, 750 feet from west line, 150 feet from south line, Block 13, Survey 65, total depth 3,300 feet, tested salt water.

Whicker, Arnold and Ahler's No. 3 Garza, 150 feet from southwest line, 450 feet from southeast line, Block 1, Subdivision Zorro ranch, Comitas grant, rigging up.

Winch and Henne's No. 2 J. Bustamente, 263 feet from southwest line, 150 feet from northwest line, Share 33, Fansler partition, Comitas grant, total depth 1,530 feet, drilling.

Jennings-Cuellar Pool—Zapata County

O. W. Killam's No. 1 R. Lopez, 600 feet from east line, 475 feet from south line, Block 6, Survey 71, total depth 2,295 feet, drilling sand.

O. W. Killam's No. 1 Slator, Block 1, Slator pasture, Borrego grant, spudded.

O. W. Killam's No. 28-C Cuellar, 950 feet from north line, 672 feet from southwest line, Survey 278, total depth 1,582 feet, coring.

O. W. Killam's No. 1 R. Hinnant, 1,838 feet from south line, 300 feet from west line, Survey 72, total depth 1,671 feet, shut down.

O. W. Killam's No. 4 (was No. 2) Hinnant, 150 feet from south line, 2,490 feet from east line, Survey 74, total depth 400 feet, drilling.

COMPLETIONS

Darst Creek—Guadalupe County

Magnolia Petroleum Co.'s No. 4 Richburg, west offset to Gulf's No. 4 Malear; total depth 2,305 feet, gauged 1,916 bbls.

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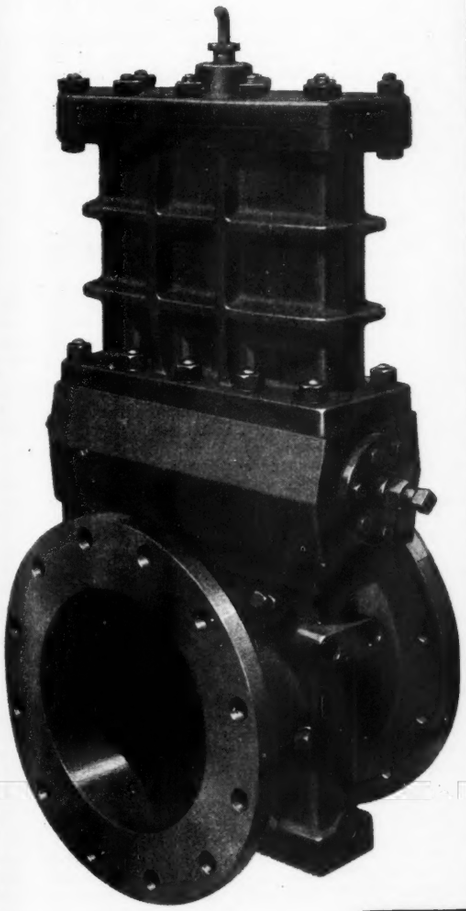

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Simms Oil Co.'s No. 4 Manford, 710 feet from northeast line, 375 feet from southeast line of Manford lease, James Hodges Survey; total depth 2,339 feet, estimated 1,000 bbls.

Pettus Area—Bee County

Sun Oil Co.'s No. 1 Burnett, 371 feet from north line, 300 feet from east line of lease, John Pace Survey; total depth 3,629 feet, estimated 20,000,000 feet of gas.

ABANDONED TESTS

Pettus Area—Bee County

Grayburg Oil Co.'s No. 1-A Kimball, 1,000 feet from north line, 200 feet from west line of 189-acre tract, Stephen Winship Survey; total depth 4,258 feet, abandoned in salt water. Lange & Mimms' (Swift and others) No. 1 Mauldin, 155 feet from north and east line of 10-acre tract out of the Mauldin 125 acres, J. Pointevant Survey; total depth 360 feet, abandoned.

Darst Creek—Guadalupe County

Witherspoon Oil Co.'s No. 1 Baker, 300 feet north of Jarmon's No. 1 Baker of 40-foot strip between Humble and Texas leases, Jacob C. Darst Survey; location abandoned.

Chapman Pool—Williamson County

Jess Tomberlin's No. 1 C. M. Partman, total depth 1,410 feet, abandoned. Wilson and others' No. 1 A. B. Simmons, total depth 2,306 feet, abandoned, dry.

NEW LOCATIONS

Pettus Area—Bee County

Houston Oil Co.'s No. 1, Block 31, Pettus Townsite, center of the block; location. Same company's No. 1, Block 39, Pettus Townsite, center of the block; total depth 501 feet, waiting on cement. Humble Oil & Refining Co.'s No. 7 McKinney, 600 feet west of No. 6 and a south offset to Block 22 of the Pettus Townsite; building derrick. J. L. Mauldin's No. 1 Fee, 350 feet from south line, 700 feet east of the creek of the lease, George A. Kerr Survey; spudded. Union Producing Co.'s No. 30 Ray, 1,100 feet from south line, 600 feet from west line, W. J. Porter Survey; rigging up.

Cartwright Field—Live Oak County

Houston Oil Co.'s No. 1-A Boothe, 70 feet south and 200 feet east of the No. 1 Boothe; location.

Darst Creek—Guadalupe County

Gulf Production Co.'s No. 3 C. Anderson, 150 feet from north line, 195 feet from east line of lease; location. Same company's No. 6 Thomas Dix, 150 feet from southeast line of the lease and midway between Nos. 1 and 2 Dix; location. Same company's No. 3 Knoblock, 150 feet each way out of the northeast corner of the Gulf's Knoblock lease; location. Same company's No. 8 Posey-Baker, derrick. Humble Oil & Refining Co.'s No. 15-A Denman, 150 feet north and 200 feet east of the northwest corner of The Texas Company's Henry Willie lease; derrick. Same company's No. 16-A Denman, 150 feet north and 195 feet west of the northwest corner of The Texas Company's Henry Willie lease; derrick. Louisiana Oil Refining Co.'s No. 6 T. Dix, spudded. Same company's No. 7 T. Dix, spudded. Magnolia Petroleum Co.'s No. 8 Thomas Dix, half way between Nos. 3 and 6, and 150 feet from north line, J. R. Robinson Survey; spudded. Same company's No. 9 Thomas Dix, east offset to No. 8 Dix; location. Same company's No. 10 Thomas Dix, east offset to No. 3 Thomas Dix; location. Same company's No. 11 Thomas Dix, east offset to No. 3 Thomas Dix; location. Same company's No. 1 Nora Huff, west offset to the company's No. 4 L. V. Echols, James Hodges Survey; location. Same company's No. 3 Annie Knodel, 150 feet from northwest line and 600 feet from southwest line of the company's lease, Joel W. Robinson Survey; location. The Texas Company's No. 9-B Knoblock, 150 feet each way out of the southwest corner of the company's Knoblock lease; rigging up. Same company's No. 10-B Knoblock, 150 feet each way out of the northwest corner of the Knoblock "B" lease; location. Same company's No. 11-B Knoblock, 450 feet northwest and 150 feet southwest from the northeast corner of the company's "B" lease; location. Same company's No. 6 W. R. Posey, rigging up. Same company's No. 6 Henry Willie, 200 feet from west line, 150 feet from north line of the lease; location.

Saxet Field—Nueces County

Saxet Oil Co.'s No. 1 McCampbell, location.

Chapman Pool—Williamson County

E. L. Chapman's No. 6-B J. C. Abbott, derrick.

DRILLING ACTIVITY

Dobrowolski Pool—Bexar County

Bolling & Michael's No. 1 J. P. Adams, 150 feet from south line, 300 feet from west line of lease, Miguel Gortaris Survey; total depth 662 feet, standing. Eckert & Son's No. 8 Sandemer, 625 feet from south line, 1,155 feet from west line of Survey No. 52; total depth 318 feet, drilling. Morgan Brothers' No. 3 Masterson, Miguel Gortaris Survey; total depth 550 feet, set casing. Penn-Tex Oil Co.'s No. 4 Sandemer, 300 feet south of No. 3, M. Menchaca Survey; total depth 680 feet, drilling shale. W. R. Swearingen's No. 2 Halberdier, 300 feet southeast of No. 1, J. Perege Survey; total depth 460 feet, drilling rock.

Darst Creek—Guadalupe County

Gulf Production Co.'s No. 3 Thomas Dix, 450 feet south of east corner, 150 feet from northeast line of lease, J. R. Robinson Survey; total depth 1,743 feet, drilling shale. Same company's No. 4 Thomas Dix, 750 feet from southeast line, 150 feet from northeast line of lease, J. R. Robinson Survey; total depth 1,700 feet, drilling shale. Same company's No. 5 Thomas Dix, 450 feet from lease corner where Gulf, Magnolia and Louisiana's leases join; total depth 700 feet, drilling. Same company's No. 3 Malear, 440 feet northeast line, 200 feet from northwest line of 72-acre tract, J. B. Alexander Survey; total depth 2,570 feet, drilling Georgetown. Same company's No. 6 Posey-Baker, 150 feet each way out of the west corner of the lease, J. R. Robinson Survey; total depth 1,115 feet, drilling shale. Same company's No. 7 Posey-Baker, 800 feet from southwest line, 150 feet from the northwest line of lease, J. R. Robinson Survey; total depth 1,725 feet, drilling shale. Humble Oil & Refining Co.'s No. 2-A Dowdy, southwestern part of Darst Creek, offset to Empire Gas & Fuel Co.'s No. 5 Dowdy; location. The Texas Company's No. 5-A Knoblock, 150 feet each way out of the southwest corner of the company's "A" lease on the Knoblock land; location. Same company's No. 8-B Knoblock, 1,080 feet from northeast line, 150 feet from southeast line of 75-acre tract, J. R. Robinson Survey; location.

Chapman Pool—Williamson County

W. D. Anderson's No. 7 M. V. Lawrence, total depth 2,242 feet, temporarily abandoned. W. D. Anderson's No. 8 M. V. Lawrence, location. W. D. Anderson's No. 6-A T. P. Simmons, moving in. Bartlett & Wilson's No. 1 R. E. Stewart, total depth 741 feet, drilling. Bartlett & Wilson's No. 2 R. E. Stewart, total depth 790 feet, drilling. J. L. Collins & Co.'s No. 5 M. V. Lawrence, 150 feet from west line, 515 feet from south line of 27-acre tract, S. Miller Survey; total depth 1,462 feet, drilling in Serpentine. J. L. Collins & Co.'s No. 7 M. V. Lawrence, 150 feet from east line, 215 feet from south line of 27-acre tract, S. Miller Survey; temporarily abandoned. E. R. Ertel's No. 1 H. Swanson, total depth 1,025 feet, shut down in shale. Elliott & Moore's No. 1 A. J. Carlson, total depth 40 feet, shut down in shale. A. J. Luke's No. 1 A. Simmons, 500 feet from north line, 450 feet from west line of 25-acre tract, H. Owen Survey; total depth 2,210 feet, drilling serpentine. Manning & Anderson's No. 1 Cooper, total depth 1,228 feet, shut down. E. C. Mead's No. 1 Abbott, 100 feet from north and west lines of 6-acre tract, S. Miller Survey; total depth 2,166 feet, plugging back to 1,940 feet. Rosenfield's No. 1 Pfluger, total depth 1,329 feet, fishing. M. M. Rowan's No. 1 A. Jackson, total depth 1,900 feet, shut down. G. Stratton's No. 5 J. C. Abbott's 450 feet from east line, 150 feet from south line of 32-acre tract, S. Miller Survey; drilling. Wilson and others' No. 1 C. Sitman, total depth 2,950 feet, shut down. R. S. Wilson's No. 1 J. A. Walker, total depth 140 feet, shut down.

Pettus Area—Bee County

Batex Petroleum Co.'s No. 3 Burnett, one location west of No. 2 Burnett; location. Burton Drilling Co.'s No. 1 Kimball, south from the Grayburg district; dropped, carried as Rawlin's No. 1 Campbell. Grayburg Oil Co.'s No. 1 J. A. Kimball, center of 189-acre tract, Stephen Winship Survey; total depth 3,547 feet, preparing to drill plug. Hurlbut and others' No. 1 Denver Chestnut, 150 feet from southeast line, 9,606 feet from southwest line of Chestnut 5,000-acre tract in Miguel de los Santos Survey; rigging up. Hicks & Young's No. 1 Billingsley, 155 feet from south and west line of tract, B. Q. Hadley Survey; total depth 360 feet, shut down.

Houston Oil Co.'s No. 2 Neumann, east offset to Cosden's No. 2 McKinney, George A. Kerr Survey; total depth 3,709 feet, running tubing. Same company's No. 1, Block 21, Pettus Townsite, center of the block; total depth 1,128 feet, set casing. Same company's No. 1 J. J. Mathews, center of Block 32, Pettus Townsite; total depth 1,617 feet, drilling. Moody-Seagraves Producing Co.'s No. 2 McKinney, 1,200 feet due west of No. 1, C. Ballard Survey; location. Rio Bravo Oil Co.'s No. 1 S.A.&A.P. Railway, 58 feet north of the south line, 120 feet west of the west line of Block 3, Pettus Townsite; spudded. Same company's No. 3 S.A.&A.P. Railway, George A. Kerr Survey; location. Southerland and others' No. 1 Billingsley, 155 feet from south line, 155 feet from west line of 40 acres off north end of 150-acre tract, B. Q. Hadley Survey; derrick. The Texas Company's No. 2 J. R. Scott, 200 feet from north line, 150 feet from west line, J. M. Urango Survey; total depth 690 feet, drilling. Same company's No. 3 J. R. Scott, 7, 100 feet southwest of No. 1, J. M. Urango Survey; location.

Union Producing Co.'s No. 17 Ray, 1,200 feet north of No. 11; total depth 4,229 feet, reaming. Same company's No. 18 Ray, east offset to Buchanan & Ogden's No. 1, Block 38, Pettus Townsite, George A. Kerr Survey; total depth 1,605 feet, drilling. Same company's No. 20 Ray, east offset to Humble's No. 5 McKinney, 150 feet south, 150 feet east of southeast corner of Pettus Townsite; total depth 3,929 feet, drilling shale. Same company's No. 21 Ray, east offset to Block 40 of Pettus Townsite, 900 feet south, 150 feet east of the northeast corner of the townsite; total depth 651 feet, drilling in lime and shale. Same company's No. 23 Ray, east offset to Block 39, 1,260 feet south, 150 feet east of northeast corner of townsite, George A. Kerr Survey; number changed to 22. Same company's No. 25 Ray, 1,700 feet from the south and 1,400 feet from east lines of P. Miller Survey; location. Same company's No. 26 Ray, 2,500 feet from the south line, 2,000 feet from east line of P. Miller Survey; location. Wilson & Hill's No. 1, Block 14, Pettus Townsite, center of the block; waiting on permit. Wilson & Hill's No. 1 Roberts, center of Block 16, Pettus Townsite; ready to spud. Nichol's Oil Corp.'s No. 4 Hicks, 550 feet from west line, 430 feet from north line of Block 20, 930 feet due south of No. 3 Hicks, Jose Maria Urangua Survey.

Lassiter Pool—Brooks County

Houston Oil Co.'s No. 1 Holbein-Wormser, 1,550 feet south and 2,650 feet east of intersection of Lisandro Saenz and Manuel Saenz tracts, El Palo Blanco de Maguellas grant; location. Same company's No. 2 Holbein-Wormser, 2,100 feet from west line, 200 feet from south line, Holbein-Wormser 962-acre tract, E. P. de Maguellas grant; total depth 3,619 feet, standing 1,200 feet in fluid, mostly oil.

Pettus Area—Goliad County

Union Producing Co.'s No. 27 Ray, 1,500 feet from southeast line, 4,550 feet from southwest line of J. Gomez Survey; location. Same company's No. 28 Ray, 150 feet from south line, 800 feet from west line of the E. Ray tract of 416 acres; location. Same company's No. 29 Ray, 450 feet from north line, 215 feet from west line of A.B.&M. Survey No. 21; derrick.

Edna Pool—Jackson County

Jackson County Oil Syndicate's No. 8 Drushell, total depth 3,710 feet, drilling lime. Wright Brothers' No. 2 Lee, total depth 3,600 feet, shut down.

Cartwright Field—Live Oak County

Houston Oil Co.'s No. 22 Cartwright, 500 feet east of No. 18; total depth 5,425 feet, pumping in mud to shut off gas.

Agua Dulce Field—Nueces County

South Texas Production Co.'s No. 2 Purl, 120 feet northeast of No. 1; total depth 1,986 feet, drill stem test shows gas.

Saxet Field—Nueces County

Saxet Oil Co.'s No. 2 Donnegan, 2,150 feet due south of No. 1, 330 feet from east line of lease; derrick completion. Houston Oil Co.'s No. 1 Dan Morgan, 105 feet north of the center of the tract and 350 feet east, offset to Thompson's No. 2 Lawrence-Harrell; total depth 1,670 feet, gas sand.

Lion-McFadden Pool—Victoria County

Houston Oil Co.'s No. 1 McFadden, 330 feet south and 900 feet east of the southeast corner of L. Mann Survey; total depth 3,801 feet, in sand, waiting on tools. Lion Oil Refining Co.'s No. 2 McFadden, 1,917 feet west of northeast corner and 512 feet at right angles from the north line of C. O. Edwards Survey, in the M. J. Travesia Survey; total depth 5,300 feet, drilling.

CANADIAN FIELDS

(Continued from Page 60)

tial test after cleaning out was rather unpromising, but it is unofficially reported wet gas production is steadily increasing, and a fair commercial well is possible. Northwest Associated's No. 2 LSD 6, same section, was shot with 700 quarts at 5,360 feet, after drilling to 5,423 feet, and is cleaning out and testing production.

Outside these tests, Imperial Oil, Ltd., has nine strings working in the Turner Valley Field. In South Turner Valley, Home Oil Co.'s No. 6, Section 20-19-2w5, is at 3,894 feet. Mayland Oil Co.'s No. 2, LSD 8, Section 17-19-2w5, is drilling 274 feet in the lime at 4,984 feet. Mayland's No. 3 is drilling at 5,307 feet. Lowery Petroleums' No. 2, NW, same section, is at 1,483 feet. Royalite Oil Co.'s No. 24, LSD 3, Section 29-19-2w5, is at 4,775 feet. Southern Lowery's No. 1, LSD 3, Section 9-19-2w5, is at 4,036 feet.

Central Turner Valley

In Central Turner Valley, Foothills Oil & Gas Co.'s No. 3, LSD 8, Section 1-20-3w5, is deepening in the lime at 4,786 feet. Royalite's No. 20 is at 3,517 feet. Royalite's No. 25, Section 31-19-2w5, is at 1,604 feet.

New McDougall-Segur Oil Co.'s No. 4, LSD 14, Section 12-20-3w5, caught fire when drilling against a 7,000,000-foot gas flow at about 5,030 feet. The derrick was destroyed, but the tools were out of the hole. The gas flow is being run through the separators, with crude naphtha recovery estimated around 67 bbls. New McDougall-Segur's No. 3, same LSD, is reported standing at 5,112 feet.

In the same section, Widney Petroleums' No. 1, LSD 11, is reported at 3,845 feet and running 10½-inch casing to overcome caving. British Dominion's No. 3, LSD 6, is at 2,900 feet. British Dominion's No. 2 deep lime producer, same LSD, gave 2,397 bbls. of naphtha and 55 bbls. of light crude in August, valued at $9,015. New Illinois-Alberta Oils' No. 1, LSD 14, is reported starting to clean out, after moving equipment from No. 2 well, which is standing at 3,684 feet. No. 1 is endeavoring to restore deep lime production, originally 107 bbls.

In Section 1-20-3w5, Okalta Oils' No. 3, LSD 9, is at 4,488 feet and drilling against a wet gas flow estimated at 8,000,000 feet. Okalta's No. 2, LSD 8, is drilling 72 feet in the lime at 4,852 feet, with wet gas flow around 3,000,000 feet. Okalta's No. 1, LSD 1, is off production and repairing. McLeod Oil Co.'s No. 5, LSD 15, is drilling at 4,780 feet. McLeod's No. 1, LSD 16, was shot with 80 quarts to restore production, originally

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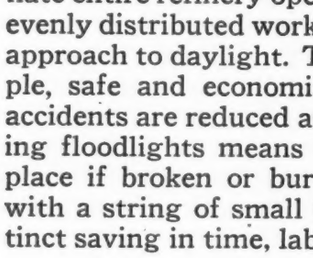

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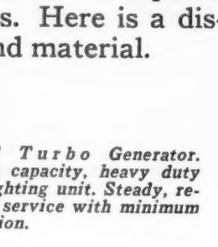

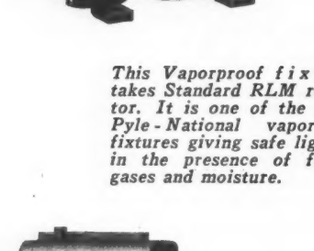

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180 bbls., but without success and other methods of cleaning out are being attempted. Calmont Oils' No. 1, LSD 2, is standing cemented at 5,877 feet.

Sioux City Oils' No. 1, LSD 10, Section 1-20-3w5, at 5,450 feet, is 1,065 feet in the lime and is being carried down for a thorough test of the lower horizons. McLeod's No. 4, LSD 16, same section, last year got a second producing horizon at about 1,400 feet in the lime.

Spooner Oils' No. 4, LSD 14, Section 13-20-3w5, is at 4,350 feet and working on casing. Spooner's No. 1, shot last month, is reported making 75 bbls., against 20 bbls. before the shot. Richfield Petroleums' No. 2, LSD 12-13, same section, is reported rigged up ready to spud in. Dome Oils' No. 2, LSD 16, Section 36-19-3w5, is drilling at 1,650 feet.

South Turner Valley

In South Turner Valley, Miracle Oils' No. 1, LSD 11, Section 4-19-2w5, got the Madison lime at 5,165 feet. Mercury Oils' No. 1, LSD 13, is reported in the Dalhousie sands at 4,887 feet. Mercury's No. 5 has resumed at 4,455 feet after pulling and rerunning casing. Mercury's No. 7 is drilling at 1,430 feet.

In Section 20-19-2w5, Calmont Oils' No. 7, LSD 11, is 452 feet in the lime at 5,414 feet and preparing for a shot. Calmont's No. 4 is resuming after cementing casing in the top of the lime at 4,840 feet.

In Section 16-19-2w5, East Crest Oil Co.'s No. 1, LSD 5-6, is drilling 340 feet in the lime at 4,652 feet with additional wet gas, and will shortly test production. East Crest's No. 2-A, LSD 4, is drilling near the porous beds of the lime at 4,428 feet.

May Finish Merland

In the extreme south, Merland Oil Co.'s No. 1, Section 27-18-2w5, may be finished by Imperial Oil, Ltd. Negotiations are still in progress. The test last year got a flush production of 100 bbls. with a heavy wet gas flow, from the Dalhousie sand at around 4,470 feet. This rapidly pinched out, and it was decided to deepen to the lime, when some drill rods were twisted off. Later a shot was put down, which failed to discharge, and ultimately the derrick burned. The hole is bottomed at 4,820 feet. The location is south of Sterling Pacific Oil Co.'s No. 1, drilled by Imperial Oil, Ltd., which is getting a small shot production from the deep lime. Officers of the Merland Oil Co. are: President, Manning Doherty; vice president, Gen. R. P. Clark; directors, F. D. Lundy, Vancouver; W. R. Sweeney, Ryland H. New and W. R. Martin, Toronto; and E. R. Read, Brantford.

Test for Steveville

In the Steveville district, Steveville Bad Lands Petroleum, Ltd., has been organized under Dominion charter by local interests to drill in the "bad lands" along the Red Deer River. The company has taken over 2,000 acres of leases secured by a syndicate of Bassano, Brooks and Steveville men. Officers are: President, Dr. A. G. Scott; vice president and general manager, E. P. Currie; secretary-treasurer, Dr. B. E. Barlow; directors, H. O. Bredin and Harvey Smith. The Red Deer area is famous for its dinosaur remains and several geologists at various times have reported favorable oil indications.

Tests in the Foothills

On the Waite Valley structure, west of Turner Valley, Calgary Development's No. 1, LSD 10, Section 21-19-3w5, drilled by Imperial Oil, Ltd., is at 3,059 feet.

On the Highwood structure, Northwest-C. & E.'s No. 1, LSD 8, Section 35-18-3w5, is drilling at 3,315 feet. Hudson's Bay Oil & Gas Co.'s No. 1, LSD 8, Section 1-18-3w5, is at 3,510 feet.

On the Moose Dome structure, Moose Oils' No. 1, LSD 16, Section 20-22-6w5, shut down some weeks ago, is planning to resume in the Devonian lime at 2,797 feet early in October.

On the Pincher Creek structure, Alberta Gas & Fuel Co.'s No. 4, LSD 16, Section 34-3-30w4, is reported running three tours with standard outfit and drilling in the upper formations, below 200 feet. Weymarn Petroleums' No. 2, LSD 5, Section 7-6-1w5, is drilling about 20 feet in the Dalhousie sands around 1,925 feet with considerably increased wet gas flow.

On the High River-Aldersyde structure, Ranchmen's Gas & Oil Co.'s No. 1, LSD 16, Section 13-20-29w4, is drilling at 4,200 feet. High River Oils' No. 1, LSD 6, Section 34-18-29w4, is standing at 269 feet but reported negotiating for a merger which will mean early resumption. Officers elected at the recent annual meeting are: President, J. E. Guest; vice president, J. E. Rogers; managing director, C. C. Walker; secretary-treasurer, Robert Gilruth.

On the Rickert structure, Paramount Oils' No. 1, LSD 2, Section 29-19-4w5, is making new hole at 2,142 feet.

New Test Spudded

An important new wildcat was started on the Watson structure, south of the Highwood-Sinclair area, when Source Rock Petroleums' No. 1, LSD 13, Section 21-19-2w5, spudded in recently. At last reports the test was resuming after setting 20-inch pipe at 60 feet. Standard tools are being used. The structure was first filed on by E. W. Watson, and considerable acreage is held by Southfield Oil Co., but Source Rock's No. 1 is the first test to be drilled. The structure bears some similarity to the Turner Valley but is thought to be a gentler fold more closely approximating a normal oil field structure.

On the Herron structure, Herron Petroleum's No. 1, LSD 3, Section 13-22-6w5, is drilling at 2,350 feet after cementing against casing.

On the Monarch structure, Majestic-Cartier's No. 1, LSD 3, Section 36-31-7w5, is working on derrick.

Duvernay Test Abandoned

In northern Alberta, Alberta Pacific Consolidated Oils' No. 1, LSD 5, Section 34-55-12w4, on the Duvernay structure north of Edmonton, has been abandoned. This test was started earlier in the year as part of an extensive program for the development by the Alberta Pacific company of acreage secured and geologized by the Canadian Development Co. of Denver. The test was drilled to 2,417 feet when it was decided that indications were unpromising. Several oil sands were passed through and these were carefully tested without developing commercial production. The hole is being plugged.

East Central Alberta

In the Wainwright Field, Senator Oil & Gas Co.'s No. 1, Section 23-44-6w4, cemented at 708 feet, is preparing to resume. Other tests in this field are shut down, pending the outcome of negotiations for a merger of Wainwright companies and the establishment of additional refinery facilities to handle the output of heavy crude. It is reported that the Alberta department of public works will experiment with the Wainwright crude in connection with mulch treatment of graveled highways.

In the Ribstone Field, Meridian Oils' No. 3, LSD 4, Section 16-45-1w4, is reported drilling below 900 feet. Oxville Oil & Gas Co.'s No. 1, LSD 15, Section 10-46-2w4, is shut down at 2,297 feet.

On the Paintearth Creek structure, Hudson's Bay's No. 1 Paintearth, LSD 5, Section 27-39-15w4, is reported drilling at 1,415 feet.

In the Peace River Field, northern Alberta, Four X Oils' No. 1, LSD 7, Section 36-83-22w5, is reported drilling below 400 feet.

Border Fields

On the Spring Coulee structure, southern Alberta, Alberta Pacific Consolidated's No. 1, Section 15-4-23w4, is reported drilling below 3,000 feet.

In the Milk River district, Commonwealth Petroleums' No. 1, LSD 9, Section 9-3-15w4, is reported drilling in the Devonian limestone at 4,440 feet. This is one of the deepest tests yet drilling in the Border area, and the deepest geologically, it being the first test along the north side of the boundary to go through the Madison lime into the Devonian. Some shows of oil and gas have been reported, but nothing approaching commercial production.

On the Montana side, Westmont Oil

Co. of Edmonton has started a test in Section 18-35-2w, in the Kevin-Sunburst Field close to the old Gladys-Belle group.

Red Coulee Field

On the Montana end of the Red Coulee structure, Monalta Oil Co.'s No. 3 Buckley, Section 1-37-4w, is reported to show a settled production of 200 bbls. The well swabbed 200 bbls. in 12 hours and when put on the pump delivered 400 bbls. flush production. The oil carried no water and is straight pipe line crude, bringing $1.65 a barrel. Production is going to the Illinois Pipe Line Co. Monalta's No. 2 Buckley is on top of the sand. Monalta's No. 1 Buckley, rated good for 25 bbls., will be cleaned out and possibly deepened. Alberta Pacific Consolidated's No. 1 Singleton is reported making 37 bbls. a day.

On the Alberta end, Alamont Oil Co.'s No. 1, LSD 12, Section 28-1-16w4, has let contract for derrick to Boyd Johnson. Devonshire Oils' No. 1, LSD 3-4, Section 10-1-16w4, is drilling at 1,550 feet. Dalco Oil & Gas Co.'s No. 2, LSD 7, Section 19-2-17w4, is preparing to resume after cementing casing for water shutoff at 610 feet.

Viking Field

In the Viking gas field, east of Edmonton, S. E. Slipper had made a location 8 miles east and a mile south of Viking. It is understood the test will be drilled by interests associated with Northwestern Utilities, Ltd. The main field developed by the latter company is north and a little east of Viking, and the new venture will try out a part of the Viking area hitherto untested.

British Columbia Test

In southeastern British Columbia, Sumas Oil & Gas Co.'s No. 2 test in Section 2-19-E.C.M. at Sumas Prairie is reported down 770 feet after drilling through 61 feet of hard sandstone caprock. The expected gas horizons at 550 and 720 feet failed to develop any large quantity of gas, and hopes are now centered on the porous horizon underlying the caprock.

Saskatchewan Gas Show

In eastern Saskatchewan, Simpson Oil Co.'s No. 1, Section 9-29-25w2, is reported drilling below 2,200 feet with the bit working against heavy pressure in alternate gypsum and lime strata.

Ontario Bounty Question

In the province of Ontario, oil producers of Petrolia district and the other older fields have appointed a committee composed of J. E. Armstrong and J. T. Sproule to interview Hon. R. B. Bennett, the new federal premier, with a view to securing the restoration of the crude oil bounty of 52½ cents per barrel formerly paid on the Ontario crude.

Ontario Operations

It is reported that a British syndicate represented in Canada by A. E. Glanward of London, England, has secured leases on 1,500 acres in Plympton Township, Lambton County.

In the Dawn Field, Lambton County, Union Natural Gas Co.'s No. 49 Ellis, Lot 19, Concession 1, Dawn, has started drilling. Union No. 50 Grey, Lot 23, Concession 10, Dawn, has spudded in.

In the D'Clute Field, Kent County, Union Natural Gas Co.'s No. 15, Storey farm, Lot 142, North Talbot Road, Raleigh Township, is below 1,000 feet and running casing. Union's No. 16 has been located in SE cor., Lot 46, North Talbot Road, east of No. 14 producer.

In Mosa Township, Middlesex County, Southern Ontario Gas Co. has made location for No. 4 test in W half, Lot 14, Concession 3. The new location is 1,100 feet east of No. 3, dry hole, but on a line extending eastward between No. 3 and No. 1 producers.

Operations Near Taber

In southern Alberta, the Hudson's Bay Oil & Gas Co. is carrying on geological work in the Taber district, north of Vauxhall. It is probable that a series of structure tests will be put down this fall. Buffalo Oils, Ltd., of Calgary, has considerable acreage in the vicinity. The Cole English Syndicate, which earlier in the year abandoned its deep test near Taber and has since done a little structure testing, is reported to have abandoned the field and offered its equipment for sale, though it will hold its leases. The Majestic Mine interests are reported planning a test for oil southwest of Taber to be started next spring. A water well has already been completed 4 miles southwest of Taber.

CALIFORNIA FIELDS

(Continued from Page 64)

years ago under compulsion and is perfectly legal in as much as it is located just outside the corporate limits of Huntington Beach. No other permits have been issued, however, and consequently tideland development at Huntington Beach will be a negligible factor in as much as the cream of the submerged acreage is within the corporate limits and therefore not subject to tideland development. The Vaqueros Major Oil Co. holds the lone tideland drilling permit at Huntington Beach and work has already got under way to drill its first test. Construction work on a small pier was started several months ago but was subsequently halted when the Bolsa Chica Land Co., a subsidiary of the Standard, refused to grant the Vaqueros Major Oil Co. permission to cross its property. This led to litigation which was recently dismissed from the calendar when the Vaqueros Major Oil Co. secured permission to move its equipment over an established right of way to the beach, from which point the materials and equipment can be moved down the beach to the drill site. The only question remaining to be settled is the location of the high tide line and this is expected to be determined when the question is considered upon the resumption of the action recently temporarily taken off the calendar. The Vaqueros Major Oil Co. has been especially anxious to develop its Huntington Beach tideland permit as its geological department is of the opinion that commercial production can be anticipated. The Standard Oil Co. has a row of producing wells located just inside the tide line at Huntington Beach, one of which was still flowing at last reports several years after completion. Robert M. Pease, at one time connected with the legal department of the Richfield Oil Co., represented the Vaqueros Major Oil Co. in a legal capacity during the litigation involving the company's Huntington Beach tideland permit. A number of operators at Huntington Beach, together with residents of that city, have recently formed an organization called the Oil Protective Association for the purpose of preventing regulatory legislation which might jeopardize future drilling operations in that district. A city election has been called for September 23, at which time the residents of Huntington Beach will ballot on four measures involving the oil industry. One of these measures requires all operators to post protective bonds aggregating $5,000 per well in order to guarantee that all properties will be returned to their original condition upon the conclusion of work. Another measure proposed for enactment requires that all operators file a financial statement in order to protect the wages of employes. A third measure requires the erection of steel rigs in all cases where the derrick are located within 125 feet of each other. A fourth proposal requires the filing of a statement indicating that any new operator contemplating work has completed satisfactory arrangements for the disposal of waste water and rotary drilling fluid.

Two New Producers

Two new wells were put on production in the Huntington Beach Field during the past week, one of which was a former upper zone producer. This was the General Petroleum's No. 145-D Santa Fe, which was recompleted in the Buckbee zone flowing 305 bbls. of unusually clean 33.6 gravity oil per day from 5,900 feet. The new well finished this week was the Union Oil Co.'s No. 19 Farwell, which was brought in doing 175 bbls. of clean 33.1 gravity oil per day from the Clarke zone at 7,865 feet. Drilling operations in the town lot section of the Potrero Field are again on the wane following the initiation of intensive development several months ago, at which time the Sunset Pacific Oil Co. proved up the

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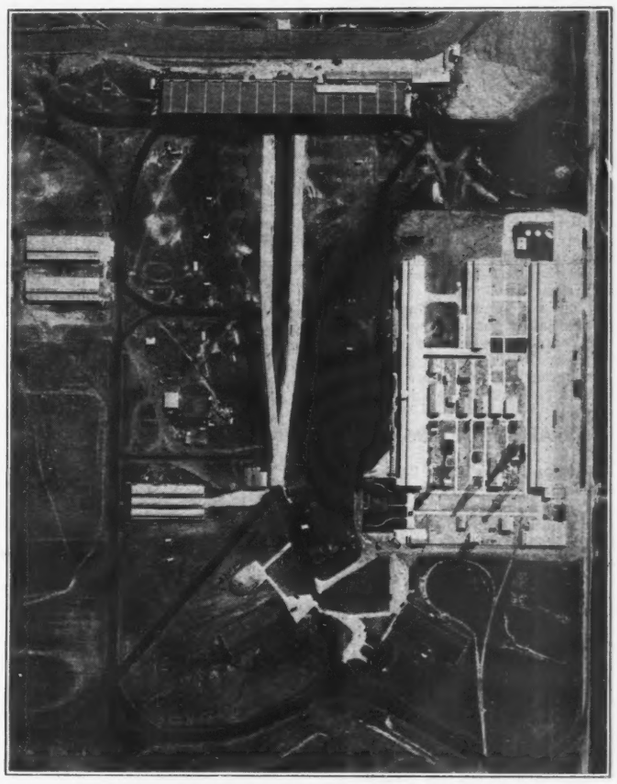

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existence of a productive horizon deeper than the one from which previous production was being secured. This new zone, together with another subsequently found by the Richfield Oil Co., has not proven as productive as anticipated with the result that drilling operations are being curtailed. The St. Helens Petroleum Co. has landed a string of 6¼-inch casing in its No. 15 Monterey at 5,200 feet and this well, a former upper zone producer which was scheduled to be carried down as a deep test for the Montebello Field, will be finished somewhere around this depth. Some additional hole will of course be made as only 12 feet of hole has been drilled below the bottom of the shoe but the landing of this pipe indicates that deep exploratory work will be retarded until a later date. A very promising oil sand has been logged at 5,200 feet and the outlook for production is quite favorable. While commenting on deep zone exploration it would not be amiss to call attention to the present status of the Chanslor-Canfield Midway Oil Co.'s No. 2-A Hobson in the extreme eastern part of the Rincon Field of Ventura County. This outpost, located in Section 23-3-24, about 2 miles east of present production, is making 275 bbls. on a compressor from 7,429 feet. Production is cutting approximately 20 per cent at the present time but this well may be of more significance than is apparent as the water may be due partly to mechanical trouble.

LA.-ARK. FIELDS

(Continued from Page 54)

Monroe-Richland gas area; Arkansas-Louisiana Pipe Line Co.'s No. 5 McEnery, Section 48-19-4, Ouachita Parish, gauged 8,085,000 feet of gas at 810 pounds from 2,205 feet; Palmer Corp.'s No. 1 Noble, Section 25-16-5, an edge well on the west side of Richland, gauged 28,888,000 feet at 780 pounds, total depth 2,450 feet, and Southern Carbon Co.'s No. 1-D Thomason, Section 31-16-6, in the southwest corner of the field, made 44,104,800 feet at 2,459 feet total depth.

Zwolle District

Four wells were due to be put on the beam in Zwolle this week but their initial has not been reported and meanwhile the district's one completion was a dry hole; Phil Brothers' No. 1 Dow, Section 31-8-12, at 2,300 feet. The Texas Company's No. 1 Giauque, SE SW, Section 27-8-12, in the north extension of Zwolle, appears to have missed the shallow stuff that opened the extension and is temporarily abandoned at 2,422 feet after a show bailed dry; No. 1 Stille is a wildcat in the SE SW, Section 31-8-11, about half way between original Zwolle production and the eastern extension opened several weeks ago in Section 4-7-11 by Pelican Natural Gas Co. Stovall Drilling Co. made a drill stem test on No. 1 Miller, Section 18-10-10, Tensas Parish, at 1,010 feet and is drilling around 1,500 feet. Service Drilling & Royalties Co.'s No. 1 Waller estate, Section 21-23-11, Sarepta district of Webster Parish, is another deep test recommended for that locality that failed to meet expectations based on the geology of the region. It got salt water and was abandoned at 3,480 feet.

Panola County

The Texas Company's No. 11 G. W. Brumble, in the E. F. Mitcheson Survey of Panola County, gauged 696,000 feet of gas at 825 pounds from 2,350 feet. Arkansas-Louisiana Pipe Line Co.'s deep test, No. 2-A Brumble, in the B. C. Jordan Survey, was lost at 4,408 feet when they could not get hold of lost drill pipe and tools and derrick have been skidded 100 feet east to start the second hole.

The Joiner well near Rusk, Henderson County, has attracted more attention than anything that happened in Louisiana-Arkansas territory and numerous individuals and organizations have been sitting on it ready to act and meantime have been busy on protection. That whole part of the country is more or less stimulated by the strike and leasing activity in a radius of many miles in Henderson and adjoining counties. Republic Production Co., of Houston, recently recorded leases on a block of 16,000 acres of Longview in Gregg County and Gulf, Humble, Southern Crude Oil Purchasing Co. and the Sun Oil Co. already had large blocks surrounding the Republic's.

Champagnolle

Ohio Oil Co.'s No. 2 Furlough, Section 12-17-14, Champagnolle district of Union County, is good for about 400 bbls. of 29.5 gravity oil from 7 feet of sand, total depth 2,984 feet. Location is in the comparatively vacant strip between the original Champagnolle Pool and the eastern extension. Sundby and others abandoned No. 2 Pardue, Section 33-16-14, in the northwest corner of the field as a dry hole at 3,207 feet where it had been shut down for the past two months after both the shallow and deep sands failed to show. Belmont and others' No. 1 Buck, Section 16-15-17, a wildcat north of Mount Holly production in Ouachita County, was dry in the Nacatoch at 1,800-1,900 feet. Graves Brothers have derrick up for a wildcat still farther northwest of Mount Holly on the Walker farm in Section 9-14-18.

Pike County Wildcat

Reports of an oil show in a wildcat in Section 26-8-24, Pike County, a mile southwest of Delight were found on investigation to be much exaggerated. The well, Henderson and others' No. 1 Tilyou, was reported to have made considerable heavy oil resembling Nevada County crude at 650 feet but it was later learned the show was very slight. At any rate it was not tested and the hole is drilling below 700 feet with outsiders denied access to the derrick. J. W. Baxter abandoned No. 1 Hallem, a wildcat in Section 17-16-26, Madison County, northeast of Fayetteville in the northwest corner of the State at 550 feet.

Benson Drilling Co. drilling for Arkansas Natural Gas Corp. on its big block in Miller and Little River Counties, Arkansas and across the line in Bowie County, Texas, has completed four of the five core tests the company contracted for in taking the block and has begun on the fifth. Possibly, more may be drilled as it is optional with the company to make a selection of the larger part of the block based on what these core tests show.

Miller County Well

The best information available to date on the Lenz well in Miller County, No. 1 Johnson, Section 24-15-26, 18 miles east of Texarkana, is that it is pumping an average of 300 bbls. daily. So far as known Lenz is the only one who knows just exactly what it is doing. Part of the oil is being used as fuel for the three wells now drilling and two or three others scheduled to start within the next few days. Last week the one 5,000-bbl. tank on the location was nearly full and another was being built. The well has been producing off and on for the past three weeks. Disposition of those attracted to the Garland City district by the discovery well appears to be to wait on the outcome of these three wells.

Joe Burnham's No. 1 Burnett, Janes Survey of Bowie County, 4 miles southwest of Texarkana, hit a fresh water sand at 80 feet and was arranging to case it off with 120 foot of surface string. Four miles south of New Boston, Bowie County seat, Timberlake and others made another drill stem test on No. 1 Tidwell, Joseph Eskell Survey, and got 21 fourbles of salt water from 2,695-2,730 feet.

GULF COAST FIELDS

(Continued from Page 57)

deep sand at 7,592 feet in Yount Lee Oil Co.'s No. 3 Moores Bluff on the east side of the field. Cranfill-Reynolds company has gone back into its No. 1 Vajdak and probably will deepen it from its present level of 7,386 feet to the new deep sand. The Vajdak well is a north offset location to Yount Lee's discovery well, No. 1 Moores Bluff (a 3,320-foot well), while the latter company's No. 3, which blew out at 7,592 feet, is 500 feet south. The latter well blew wild for several days but was successfully killed and now is engaged in trying to pull stuck drill stem.

Week's Completions

Completions of the week, in addition to those mentioned, included Victor Oil Co.'s No. 2 Gulf Land, south side of North Dayton, flowing 500 bbls. from sand at 5,035-66 feet; Republic Production Co.'s No. 130 Dolbear, Hull, a workover, pumping 60 bbls., 2,440 feet; East Batson Oil Co.'s No. 1 Gulf, Batson, pumping 6 bbls. net oil, 519 feet; Yount Lee Oil Co.'s No. 25 McFaddin, Spindletop, a workover, pumping 48 bbls. net oil, 2,896 feet; Yount Lee Oil Co.'s No. 31 State, Hackberry, flowing 1,800 bbls., 3,894 feet; and Union Sulphur Co.'s No. 737 fee, Sulphur, a workover, pumping 18 bbls.

In Chambers County, The Texas Company has abandoned its wildcat, No. 1 Jackson, located 2,625 feet south and 1,000 feet west of the NE cor. of the T.&N.O. Survey, Section 17. The hole was put to a total depth of 5,010 feet. The test is on one of the newer geophysical dome prospects. The Texas Company's wildcat, No. 1 Thomas, J. P. Tilley Survey, Calhoun County, made a drill stem test at 5,063 feet, showing salt water. It will be deepened.

Late in the week The Texas Company's No. 1 McFaddin, H. Bonny Survey, 2 miles southwest of Lion Oil & Refining Co.'s wildcat gas well, No. 1 McFaddin, was drilling shale below 4,329 feet. This test is of particular interest in view of the proximity of this depth to the gas-producing horizon of the Lion well, which was completed around 4,300 feet. Lion Oil & Refining Co.'s No. 2 McFaddin, 660 feet east of No. 1, at latest report was drilling shale at 5,310 feet. This test passed up the gas horizon in an effort to pick up a possible oil sand. Houston Oil Co.'s No. 1 McFaddin, in the same area, is fishing at 3,315 feet.

KANSAS FIELDS

(Continued from Page 52)

feet. Tulsa Oil Co.'s No. 2 Beauchat, SW cor. SE SW, Section 6-24-12, made 20 bbls. from sand 1,778-84 feet. Syndicate Oil & Gas Co.'s No. 6 Shook, C SW NW, Section 6-24-12, is making 100 bbls. from sand 1,716-60 feet. Morrowery and others' No. 1 Denchfield, SE cor. NW, Section 12-27-9, is dry and abandoned at 2,320 feet.

Kingman County

Aladdin Petroleum Co. and others moved the rig in for No. 1 Shrag, SW cor. NW, Section 16-27-5w.

McPherson County

Sinclair Oil & Gas Co.'s No. 5 McCurdy, NE cor. SE, Section 33-20-3w, has been completed for 1,270 bbls. in Wilcox sand 3,340-74 feet. Gypsy Oil Co.'s No. 4 Kinney, NW cor. SW, Section 34-20-3w, made 957 bbls. in Wilcox sand 3,439-58 feet.

Morris County

Urshell and others' No. 1 Scott, NE cor. SW, Section 6-16-6, is dry and abandoned at 2,480 feet.

Pawnee County

Amerada Petroleum Corp.'s No. 1 Welch, C SE SE, Section 30-21-17w, is a dry hole at 4,228 feet. Skelly Oil Co.'s No. 1 Millhouse, C SW, Section 34-23-17w, has been abandoned at 5,002 feet.

Rice County

The Texas Company's No. 1 West, SE cor. SW NW, Section 21-20-10w, has been completed in Silicious lime 3,337-51 feet, swabbing 400 bbls. in 5½ hours.

Russell County

Signal Oil Co. and others' No. 1 Sellens, SE cor. NW, Section 26-15-13w, is a rig on the ground. The Texas Company's No. 2 I. Leonard, SW cor. NW NW, Section 6-13-15w, is dry and abandoned at 3,440 feet. Mid-West Exploration Co.'s No. 33 Witt, SE cor. SW SE, Section 4-14-15w, has been abandoned at 3,297 feet. Stearns & Streeter's No. 1 Mitchell, SE cor., Section 6-15-14w, is dry and abandoned at 3,390 feet.

Sedgwick County

Lassen and others moved the rig in for No. 1 Schwertner, NE cor. SW NW, Section 11-27-1w. Blankenship, Elder and Jackson's No. 1 Schott, SE cor. SW NE, Section 24-27-1, is moving in tools. Work & Covell's No. 1 Freeman, NE cor. NW, Section 19-27-2, is a cellar. E. F. Jones made location for No. 1 Smyser, NW cor. SE NE SW, Section 19-27-2. Seigel Brothers' No. 1 Soukup, SE cor. NE NW NE, Section 19-27-2, is rigging up. Derby Oil Co.'s No. 1 Rimel, NW cor. NE NE, Section 30-27-2, has been completed for 1,601 bbls. in Wilcox sand 3,233-36 feet.

Woodson County

Sheedy and others' No. 1 Reed, SW cor. SE SW, Section 26-23-14, is dry and abandoned at 1,642 feet. Henderson and others' No. 2 Wilhite, C N half SW, Section 14-26-13, has been completed for 250,000 feet of gas in sand 660-90 feet.

RUBBER FROM PETROLEUM REPORTED DISCOVERED

By Charles E. Kern

Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., Sept. 15.—The Bureau of Standards possesses a sample of rubber supposed to have been produced from crude petroleum by the extraction of certain hydrocarbons in a California oil laboratory, stated Dr. George K. Burgess, director, before the Inter-American Conference on Agriculture, Forestry and Animal Industry recently. This announcement was hailed as an achievement of science of vast importance.

At the same time Doctor Burgess said that rubber crystals had been produced under the direction of Dr. E. W. Washburn, head of the chemical laboratory of the Bureau of Standards, which he said opens up enormous possibilities for science and industry.

Government experts have not passed a final opinion on the California exhibit, while the crystalline rubber is only an experimental achievement yet, but both are regarded as holding promise for the future in the commercial world.

"At the bureau we have examined rubber said to have been extracted from crude petroleum, and within the past few months we have produced in the laboratory rubber in crystalline form," Doctor Burgess said. "Where these discoveries will lead, no one can say, but in the past history shows that, with a glimmer of hope to light his way, the physical scientist will not be turned aside from his goal.

"Up to this time we have only the crystals and we cannot predict what the eventual product will be. It may have properties possessed by none of the metals; in fact a new material with properties all its own and no one can say what that would mean. Up to this time," he stated, "rubber has been an amorphous substance on the borderline between a solid and a liquid. Obtaining rubber from crystals would mean a 'solid rubber.'"

The achievement is somewhat similar, Doctor Burgess said, to previous achievements of Bureau of Standard chemists in obtaining certain rare sugars in crystalline form, thus making them of great commercial importance.

OIL WELL IN NUEVO LEON

First petroleum well in State of Nuevo Leon, Mexico, has been brought in on land held under concession operated by Duncan R. McMillan, an American, in the municipality of China, north of Monterrey. Well has initial daily production of only 200 bbls., but oil is of high quality.

ARCTIC FILLING STATIONS

Gasoline filling stations in Baffin Land, Greenland, Spitzbergen and other icy climes are being established by Imperial Oil Co., Ltd., Canadian subsidiary of Standard Oil Co. of New Jersey. The stations will be caches of gasoline and lubricating oils for use by the Anglo-Canadian Arctic Air Expedition next year.

Following the passage supposedly taken by Lief Ericson 1,000 years ago, the expedition will traverse England, Scotland, Iceland, Greenland, Baffin Land, Southampton Island and a considerable portion of northern Canada. Its ships will attempt to fly from London to Ottawa or Winnipeg next summer, and at no point will they have an oversea jump of more than 450 miles. Its backers include the Prince of Wales, the Duke of York and the Duke of Gloucester.

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FOR SALE—400 acres Fee Simple lands on the Hatchetigbee Structure, SE Choctaw County, Alabama. $20 per acre. N. A. Molton, Mobile, Alabama.

WANT TEST WELL financed on structure west of Dry Creek gusher, Carbon County, Montana. L. Griffith, Townsend, Montana.

CAPITAL TURN-OVER PROFITS

Oil man of broad experience, now associated with independent oil company in executive and official capacity, is seeking contact with a small group of reputable and reliable investors able to put up from $500 to $1,000 each in a fund for buying geologically well located royalties under or near wells actually drilling, selling a part on advancing market while well is drilling for enough to return capital outlay and some profit, and holding remainder for production and subsequent profits. Address Box E-290, The Oil and Gas Journal, Tulsa, Okla.

FOR SALE OR TRADE

ONE MODERN fireproof daylight manufacturing plant, steel and tile construction, size 100x440 feet, sixteen acres of land, 50,000 gallon concrete tank and tower, on Missouri Pacific Railroad; suitable for the manufacture of airplanes, metal and construction work, planing mill, oil well tools and supplies, etc. Located one mile from city limits; low taxes and insurance. Attractive price; liberal terms. JOHN TANCRED, Jr., P. O. BOX 1506, SAN ANTONIO, TEX.

GEOPHYSICAL METHODS oil and gas locating. Write Box E-274, The Oil and Gas Journal, Tulsa, Okla.

BEAT PRORATION—WILDCAT

5,000 Acres on good structure for well or bottom hole money. Write N. Station, Box 5398, Amarillo, Texas.

IDEAL SERVICE STATION site in growing Marion, Ohio. George and Greenwood Streets. Opportunities to develop one or more lines of business. T. R. O'Brien, 82 Linden Ave., Middletown, N. Y.

BUSINESS OPPORTUNITIES

FOR SALE TO SETTLE ESTATE—110-acre oil and gas lease near Paola, Kans.; production and pipe line connection. Fine chance to form nice little company. Less than $2,000 will handle it. Address, Dr. Slusher, 220 West 12th St., Kansas City, Mo.

A LIFETIME OPPORTUNITY

By chance I came into possession of control of a gas and oil company whose name will speak for itself and whose properties are proven and producing, backed by opinions of eminent geologists. I want an associate to help me finance deal. Unless you have a clean record, some knowledge of business and $25,000 cash, do not waste your time or mine. The reward is large.

K. R. Peak,
23rd Floor, 75 East Wacker Drive,
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dealers in
Used Oil Field Equipment
for
Drilling, Production, Gasoline
and Pipe Line Departments.
List your surplus with us.
And advise us of your needs.
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Seminole, Oklahoma.

OIL INVESTMENT
OIL ROYALTIES AND LEASES

We own and control thousands of acres of leases and royalties in western Oklahoma. Recent completion of well in Harper County by Sinclair Oil & Gas opens large area for future development. Salesmen wanted.

KILGORE PETROLEUM CORP.,
E. P. Kilgore, Pres.,
Perrine Building, Oklahoma City, Okla.

OIL AND MINING STOCK BUYERS' NAMES. Carefully picked list investors with money just compiled penny each. Can furnish up to 500,000 FREE suggestions preparing your campaign. Catalogue showing thousands of other mailing lists, mailed without obligation. Write WHITES Investors Lists, Room 950, 218 South Wabash, Chicago, Ill.

MINING PROPERTIES and new inventions inspected, organized and financed under declaration of trust. R. D Ryan, Lawyer, office Shadyside, Ohio. residence. Chloride. New Mex.

LEASES—PRODUCTION

NEW MEXICO LEASES: Lea, Eddy and Chaves Counties. H. T. Orcutt, 1014 Colcord Bldg., Oklahoma City, Okla.

OIL LEASES—88 form, semiproven shallow field, Anderson County, Kansas. Will assign acreage for drilling well offsetting 80 acres. W. L. Morris Loan Co., Garnett, Kans.

FOR SALE producing and non-producing royalties, good geology under major companies' blocks in Southwest Texas. C. H. Bailey, 1712 Milam Bldg., San Antonio, Texas.

STEPHENS county royalty for sale. 500 full acres under 2,700-acre spread. Clyde Miller, Duncan, Okla.

OIL ROYALTIES: Invest in new territory where profits of 500 to 1,000 per cent are being made. A. Raymond, Box 1776, Great Falls, Montana.

EXTREMELY LOW DRILLING costs and gusher (up to 5,000 bbls.) production make Williamson County, Texas, Serpentine plugs the best venture. $4,000 to $8,000 covers entire cost including drilling of well. Inquiry solicited.

Nicolle & Nicolle
Geologically selected drilling blocks.
P. O. Drawer 1720. Fort Worth. Texas.

FOR SALE LEASES—320 acres new state leases dated August, 1930, in center of T. 16s, R. 32e, Lea County, New Mexico, on structure and right on northwest trend from Hobbs Pool. All or any part at $10 per acre for quick sale. Best buy in Lea County for the money. Write or wire Geo. W. Slater, 568 Twelfth St., Oakland, Calif.

CAN FINANCE purchaser of oil properties to five thousand barrels per day; with undeveloped acreage. G. W. Andrews, 4401 Main St., Dallas, Texas.

LEASES—PRODUCTION

FOR SALE: 5,000 acres oil and gas leases on structure, settled production. Royalties and mineral rights on large tract. Complete data furnished on application. W. P. Harley, Bowling Green, Ky.

OIL LEASES AND ROYALTIES
Bought and Sold
In the Hobbs Pool
Lea County, N. M.
A. L. Gurley, Hobbs, N. M.
P. O. Box 26—Phone 6

FOR SALE: LEASES—ROYALTY
10,000 acres in Leases @ $1.00 per acre.
5,000 acres in one-half Royalty @ $2.00 per acre.
1,000 acres land in Fee @ $4.00 per acre.
in
VAN BUREN COUNTY, ARKANSAS
All on structure. Close to proposed drilling sites.
W. F. BRIDEWELL & COMPANY
P. O. Box 1125
Little Rock, Arkansas

PRODUCING LEASE in N. Texas. Leases and royalties Ector County. Anderson. Linz Building. Dallas, Tex.

FOR SALE—Leases in Ford, Hodgeman, Stanton, Morton, Gray Counties, Kansas, where it is hot; also a few royalties, $10.00 base. Lew Meyers, Dodge City, Kans.

FOR SALE—800 Acre Shale Gas Lease, one well; six miles N. E. Garnett, Kansas. B. Fetherlin, Iola, Kansas.

FOR SALE

Ten acre lease in center of Oklahoma's largest gas field. Has one gas well completed making 10 million feet. Just connected to large pipe line. Will sell for one-third its value in order to carry on necessary development on other leases. Also have thousand acre block on leases near Cement Oil field for well. We can also offer material interest in offset well just starting for use of casing. References. Address Box 572, Chickasha, Okla.

HAVE 160 ACRES IN OSAGE County adjoining big producing lease. They drilled two 900' wells offsetting us, now eight years old making ten barrels. Structure shows much better on ours. Want reliable party to drill two shallow wells for interest. 1302 Philtower Bldg., Tulsa, Okla. Phone 3-4841.

25 ACRES ROYALTY near development $150. 10 Acres Royalty near Chandler $100 per acre. 160 Acres Fee with full royalty $4 per acre. Rollison, 711 Grand, Oklahoma City, Okla.

FOR SALE

CONTROL in Oil and Development company. Valuable leaseholdings in Pecos County, Texas. Proven field. $30,000 will handle. Owner has other interests needing his attention. Address Box E-294, The Oil and Gas Journal, Tulsa, Okla.

OIL AND DEVELOPMENT COMPANY with improved leaseholdings on proven acreage desires to sell part of its leaseholdings at very attractive cash price. Address Box E-293, The Oil and Gas Journal, Tulsa, Okla.

5,000-ACRE lease on La Salle uplift, with 8-inch case well, 1,500 feet deep, contract and lease escrow, subject to completion 4,000 foot well, unless oil in paying quantities found lesser depth. A. H. Rife Land Co., 815 Alamo National Bank Building, San Antonio, Tex.

LIVE OAK COUNTY, TEXAS
OIL LEASES—ROYALTIES

3 producing gas fields; 16 blocks for drilling; 6 deep tests drilling. Own 15,000 acres leases and royalties in and adjoining drilling blocks in county. Own 100,000 acres leases and royalties in Texas. Write STIEREN & KOENIG, 905-7 ALAMO NAT'L. BLDG., SAN ANTONIO, TEXAS.

ROYALTIES—PRODUCTION

OKLAHOMA OIL ROYALTIES
Royalty Sales Company
Suite 523 105 N. Clark St. Chicago

ROYALTY BARGAINS in Oklahoma. Lincoln and Pott Counties for sale. American Inv. Co., 201 Elks Bldg., Oklahoma City, Okla.

ROYALTIES—PRODUCTION

WE WANT good oil and gas royalties. Send us full information with reports. U. S. Royalties Corporation, C. A. Johnson Bldg., Denver, Colo.

BEDROCK ROYALTY PRICES ahead of drilling on major company blocks. $6 per square mile. Perpetual deeds and title warranty. Clearly stated and understandable interests. See maps and bulletins. R. R. Fisk, Box 1214-B, Wichita Falls, Texas.

TEXAS OIL ROYALTIES
Bought and Sold.

Inquiries Invited.

J. G. REAVES

Milam Bldg., San Antonio, Tex.

THREE ACRES VAN ZANDT royalty 8 miles SE Van. Langham Survey. $25 per acre. Box 816, Bowlegs, Okla.

NEW ROYALTY LIST Kansas, Oklahoma, Texas and New Mexico. Maps free. Harry Haynes, Grantville, Kansas.

WILL SELL ALL OR PART working interest in 13,000 barrel producer, Oklahoma City Field, Write Box 489, Shawnee, Okla.

ROYALTY INTERESTS under Drilling wells for as low as $12.50. Balcone Fault Zone, north of Van Oil Field, Texas. Perpetual deeds with perfect title. We are specialists in offset and "Under the Drill" Royalty. Write Majestic Royalties Company, 608 Patterson Building, Denver, Colo.

WHEN OTHERS fail try us for the right prices. Jobert Royalty Co., 319 Tradesmen's National Bank Bldg., Oklahoma City, Okla.

Raccoon Bend Austin Co. Texas offer 1/128 Royalty in 1,230 acres in Raccoon Bend. One of the best coastal fields. Between 75 and 100 producing wells in immediate vicinity. P. O. Box 202, Chapel Hill, Texas.

FOR SALE: Royalty under W½ SE¼ Sec. 29-8n-4e, Pottawatomie County, Okla. Leased Phillips Petroleum. Price $160.00 per acre. Address Walter Pope, 901 Atlas Bldg., Tulsa.

DEEDED ROYALTIES: 10 acre tracts, Texas, Oklahoma, Colorado, New Mexico. Write for sale list. Continental Royalties, Inc., Box 1585, Amarillo, Tex.

ROYALTY FOR SALE under one of Oklahoma City's best producing sand wells. Write Box 489, Shawnee, Okla.

$5 BUYS deeded oil royalty near big 25,000 barrel gushers in Okla. City Field. 417 Equity Bldg., Okla. City, Okla.

ROYALTY FOR SALE. Undivided 120 acres SW 17-T6-R9W, Caddo County. Cement District $50.00 per acre. M. Wagner, P. O. Box 65, Earlsboro, Okla.

NORTHWESTERN OKLAHOMA perpetual participating oil and gas royalties in spreads or single tracts leased to responsible companies. Address Oil Royalties, P. O. Box 1595, Tulsa, Okla.

PERPETUAL DEEDED ROYALTY for sale. Easy payment plan. Brewster County, under land Texas Co. purchased seven-eighths of all oil, gas and other minerals. C. A. Bonds & Co., San Antonio, Texas.

OIL INDUSTRY PRINTING

OIL FIELD LEGAL BLANKS

Leases, assignments, releases, township plat books, well records, etc. Request on your letterhead gets free catalog. Olds Press, 215 East Third St., Tulsa, Okla.

ADDRESSES WANTED

ANYONE KNOWING WHEREABOUTS of Fred B. Shields, welder, please notify Box 1006, Long Beach, Calif. at once. Wife and little girl in need. Mrs. F. B. Shields.

IF MR. R. LEWIS JEWETT or his friends will give his address he will get information of great interest. Address Box E-292, The Oil and Gas Journal, Tulsa, Okla.

(ADDITIONAL CLASSIFIED WANTS ON NEXT PAGE)

Chicago Oil Market Is Fairly Active

Greater Portion of Business in Furnace Oils. Gasoline Demand Fair. Natural Gas Competing With Fuel Oils

By J. B. Waldo

CHICAGO, Sept. 15.—The refined oil markets as a whole were fairly active today, although the greater activity was in the heavy oils especially furnace oils. The time is drawing close when they will be needed by the users, and distributors who had not taken in some supplies are placing their orders. The gasoline demand was only fair at best even the instructions against contracts running rather light this morning. Jobbers are still buying very conservatively not wishing to accumulate any stocks.

Refiners with a list of contract customers have been harrassed by their trade for local protection as the price cuts include practically every large city in the territory except Chicago and St. Louis. The attitude of the refiners is that they cannot give this protection yet the accounts which are demanding it are in many cases among their best. The refiners are now asking 6½ cents as their best spot price to the trade. Some gasoline can be purchased for a little less but the refiners are very firm several claiming that they have reduced their runs until they have to purchase for their own requirements. The orders received were for the most part accompanied by a request for prompt shipment.

Kerosene remains unchanged. There was considerable activity in the furnace oil group of products with straw gas oil, high grade distillates and high gravity fuel oils very firm and hard to buy. The action of the Shell corporation in withdrawing from the market on fuel oil and gas oils has left a local shortage in material which is giving the market more strength than it has shown for some months. There was a good number of inquiries in the market for industrial fuel oils this morning and quite an amount of business was placed. The orders were usually for small or moderate quantities but the buying was much more readily done.

Lubricating oils were quiet with considerable uncertainty existing regarding prices for refinery stocks. The consumption over the week-end was decreased locally at least by showers in the morning which kept many motorists near home. The entire situation is confused by new conditions in the industry. In southern Indiana, for example, a local user of fuel oil writes that he is being asked to sign contracts for two years for natural gas at prices which just about equal his last fuel oil costs. He wants to know what the oil industry is going to do with the situation. He states that unless assured of a supply of fuel oil for two years at present prices he can sign with the gas company. Something of the same kind will come with the early spring in this locality when natural gas will be available.

The actual gasoline demand was not really active last week. Sales were light in the spot market, and while some of the large refiners claimed that their contract business was a fair average for the time of the year, other representative concerns stated that as soon as the new prices reached the country trade they simply quit buying and that in the last week in particular there had been little doing. The management of these companies did not know to what to attribute the lack of business unless it was the new prices coupled with the fact, and it is a fact, that the jobbers all over the territory believe that a tank wagon cut is coming soon. One reason set for this belief is the precedent, as they claim, that the price was cut last year and the year before and that is a good reason for anticipating a cut this year. Another and much more significant reason is the number of points at which the station price at least, has been reduced. These points are not little country towns off the road to anywhere, as the saying goes, but in real centers of activity such as Indianapolis, Kansas City, Minneapolis and St. Paul.

Cuts at such cities as these, and others of like importance as centers of population, mean something to the major companies, for their gallonage is usually by far the largest and their loss of revenue as a consequence of the cuts, the most important. According to a report from the State authorities of Illinois, the Standard Oil Co. sold through its own stations in the State, within six months 32.60 per cent of all the gasoline sold in the State. Its total sales were nearly 150,000,000 gallons. It is easy to figure out how much more a cut of 1 or 2 cents a gallon would mean to the Standard Oil Co. than to some of the other companies that sold less than 1 per cent of the total quantity of gasoline disposed of at retail within the State during the first six months of the year. There are still a large number of communities in which the sale price of their gasoline has not been reduced and the large integrated company always enjoys the advantage of having stations at points where the normal price is maintained.

Incidentally, the cutting of the service station price while the tank wagon price remains unchanged has brought up the question of why a tank wagon and a service station price? Why two prices? Would not one price be enough for all business purposes? The management of the Standard Oil Co. (Indiana) has stated in reply to the query, that they have a very considerable tank wagon business which they do not care to disturb. The Standard Oil Co. (N. J.) is also understood to be strongly opposed to any change in the present system. In some of the territories of the major companies, the spread between the tank wagon and the station price is more than in the Indiana territory being 3 cents in several such territories. This wider spread would make it more difficult to do away with the two prices but in the Indiana territory it has seemed as if the Standard Oil Co. (Indiana) had gone far towards making a removal of the extra price possible through its reduction of the common spread to 1 cent a gallon. That no change will be made in the present practice at an early date seems well assured.

Low Price "Gas" Disappointing

One of the noticeable and noteworthy features of last week's gasoline market was the gradual disappearance of the low priced gasoline. There was very little bought for September deliveries at the prices at which it was offered, owing in part to the fear that even the 5¼ or 5½-cent prices at which U. S. Motor gasoline was offered would prove too high. The entire holdings of the trade here available for resale could not, it is estimated, have amounted to more than a few hundred cars. Any opportunities to add to their holdings by purchases at 6 cents or a fraction less were passed by with the same thought in the minds of buyers that these prices would not hold. Inquiry of a number of active resellers has brought the statement that they were not long a single car and were only buying to cover their actual sales. Of course this does not apply to the differential states of lower Michigan and Ohio where the price situation shows little if any improvement. But over the remainder of the territory, the prices are firmly held with very few exceptions and have at this writing a distinctly upward tendency with the probability that a 6½-cent rate for U. S. Motor gasoline will prevail in the Group 3 market on sales to jobbers. This will bring the spot price in the market up to that which has been held for months by the major refiners with no result in the way of sales up to the present time, but at that price they will now be able to sell a little spot gasoline. There is of course the possibility that some refiner with a demand for cash pressing him may be induced to sell his accumulations and even to run gasoline to sell at a little less than this price, but at the worst the refiners would be getting a profit on their U. S. Motor sales.

Spot Orders

Spot orders were placed during last week with the urgent request that prompt shipment be made. In some cases the order included a date on which the gasoline must be on the jobber's siding. This is taken as evidence that the jobbers have exhausted their purchases which they made in anticipation of their Labor Day demand and are right down on the bottom of their tanks again. In several instances it is known that stations have been entirely out of gasoline in various parts of the territory. The reason for this condition of jobbers' stocks is that the country trade is convinced that a tank wagon cut is due. It will not carry larger stocks than it has to until that question is settled. The cut made by the Standard Oil Co. (N. Y.) is regarded as the beginning of the reduction to a lower level of prices. In many parts of the territory, the jobbers would be making more than 5 cents a gallon gross profit and they have always admitted that a 5-cent margin between the service station price and the laid down cost of the gasoline gave them a sufficient profit "to stay out of the red." This condition will continue at these points with a 2-cent reduction in the tank wagon price if the refinery price stays at 6½ cents. At that refinery price the laid down cost of the gasoline would be in many parts of the territory, a rate which would still leave the jobber 6 to 7 cents instead of the 5 cents which he needed to assure him of a profit, that is, such would be the case if the jobber has retained for his business, the profit which it has earned and has not in consequence of excessive competition, al-

(Continued on Page 148)

CLASSIFIED WANTS

(Continued from Preceding Page)

POSITIONS WANTED

SALES ENGINEER, colleged trained, two years experience as Chief Engineer and Manager of Pump Manufacturing concern, six years exceptional experience in Engineering in large Oil Refinery, six years experience as Oil Pumping Specialist, selling for large Pump Manufacturing Company, covering practically whole United States. Available October 10th, 1930. Address Box E-296, The Oil and Gas Journal, Tulsa, Okla.

GEOLOGIST — Seven years' experience Oklahoma, New Mexico, Colorado and Texas, desires connection with company or individual. Domestic or foreign service. Write Box E-275, The Oil and Gas Journal, Tulsa, Okla.

TWO MAP DRAFTSMEN want extra work. Ten years experience. Reasonable rates. Write Box E-277, The Oil and Gas Journal, Tulsa, Okla.

SALES MANAGER, energetic and capable, with years of experience with large lubrication manufacturer, desires connection with oil company. Have employed and trained salesmen and established branches in various sections of the United States. In Tulsa ten years. Accustomed to handling large accounts. Write Box E-285, The Oil and Gas Journal, Tulsa, Okla.

WOULD CONSIDER POSITION with oil company, or travel with patient. Twenty-five years in practice osteopathy. Know osteopathy. Age 45. Single. No bad habits. Go anywhere. Address Box E-287, The Oil and Gas Journal, Tulsa, Okla.

SECRETARY-OFFICE ASSISTANT
Young man desires position with oil or gas company executive. Capable stenographer and correspondent. Familiar with compilation of business statistics. Good education. Three years office experience. Age 23. References. Can locate any section of country. Write Box E-291, The Oil and Gas Journal, Tulsa, Okla.

HAVE OIL ACCOUNTANT AND LEASE-ROYALTY buyer, 15 years experience. No objections to traveling. Available immediately for position with oil company. Personnel Service Corp., 227 Cole Bldg., Tulsa, Okla.

JAR MAKER, and all round oil well tool maker, hammersmith, or blacksmith, wishes position. Best references. F. G. Dietz, 416 Park St., Orrville, Ohio.

POSITIONS WANTED

AN AUDITOR AND BUSINESS MAN employed in Tulsa wishes to connect with a company where a portion of his salary can be applied to the purchase of an interest in the business. Recommendations A No. 1. Address Box E-288, The Oil and Gas Journal, Tulsa, Okla.

PETROLEUM CHEMIST, 7 years control and research in general refining, compounded oils, lubricating greases and vapor phase cracking. Will take charge of laboratory or grease plant. Write Box E-289, The Oil and Gas Journal, Tulsa, Okla.

GRADUATE GEOLOGICAL ENGINEER desires new connection, preferably geological. One year field work besides three years geological and engineering experience. Best of references. Address Box E-291, The Oil and Gas Journal, Tulsa, Okla.

HELP WANTED

OIL FIELD
MACHINERY SALESMAN WANTED
Acquainted with purchasing departments of production companies, and knowledge of production practices. In response give age, experience, references, and salary. Write Box E-284, The Oil and Gas Journal, Tulsa, Okla.

WANTED. GRADUATE CHEMICAL engineer to work on plant problems. Write stating training, refinery experience and salary desired to Box E-295, The Oil and Gas Journal, Tulsa, Okla.

FOR SALE—MAPS

SOUTHEAST NEW MEXICO
MAPS
Send for list.
THE M. H. HUNTER CO
Roswell, N. Mex.

RANCHES AND FARM LANDS

RANCH—OIL—GAME—COAL
39,720 acres, located southwest of San Antonio, 60 per cent choice agricultural land, part open prairie, improved and watered as a ranch; report by competent and nationally known geologists. Would also make a wonderful game preserve, deer are quite plentiful, also many other possibilities. Never been priced less than $10 per acre. In order to settle an estate, we are authorized to make a price of $7.50 per acre. Terms.
REQUA & HILDEBRAND,
San Antonio, Texas.

Markets Strengthening in the East

Recent Price Slashes in the New York Metropolitan District Caused by Local Condition. Too Many Stations

By A. E. Mockler

New York Bureau, The Oil and Gas Journal, Rooms 1919-21, No. 154 Nassau Street

NEW YORK, Sept. 15.—Drastic tank wagon slashes which have been made throughout the New York metropolitan area by all of the leading distributors resulted from a purely local condition and have had no effect on the tank car market, nor on conditions in other parts of the country. For some time past the larger distributors have been subjected to much "heckling" on the part of independents who have been selling gasoline at stations at seven gallons for $1, tax included.

The price cuts were made in the face of strengthening markets in other centers, and it is believed they will not stand for long. Statistics showing that refinery activity is at its lowest point on record indicate that there will not only be a continued reduction of gasoline stocks during the balance of the motoring months but a marked subnormal winter storage.

Gasoline volume has been maintained well in the eastern markets, but kerosene has been rather dull.

There is now much talk concerning seasonal reductions on tank car shipments, but it is too early to estimate just what form the customary price revisions will take.

Tank Car Gasoline

Tank car gasoline remains unchanged, despite the reductions of 1 to 2 cents in tank wagon, made as a corrective move for purely local conditions. Principal factors hold to the 9-cent per gallon level for U. S. Motor at refineries.

Price shading in the eastern refinery markets appears to be lessening considerably, although it is still reported on the part of smaller operators. However, even the cut-price division of the trade has exhibited a stronger stand, moving up from their 8¼-cent basis to a firm price of 8½ cents per gallon. The need for spot cash which motivated some of the recent price cuts has been somewhat alleviated, and the market is gradually assuming a more normal aspect.

One outstanding feature is the continued gains of premium fuels, indicating that with a certain class of consumers the cut-price attitude holds as little attraction as ever, while the quality gasoline holds a strong and increasing appeal.

Tank Wagon Gasoline

The past week saw considerable activity in the tank wagon gasoline market here, with price cuts of from 1 to 2 cents a gallon made first by Standard Oil Co. of New York, and quickly followed by Shell Eastern Petroleum Products, Gulf Refining, Richfield, Tide Water, The Texas Company, Sinclair Refining and Cities Service.

The 2-cent reduction was made effective in Brooklyn, Queens, Bronx, Manhattan, Mount Vernon and Yonkers, where independent distributors have been disrupting the service station business of the larger companies with cut-price offers. A 1-cent reduction was made in Port Chester and in Staten Island.

Those well versed with the facts of the situation declare that this new price scale is but a temporary measure and will not constitute the seasonal price revision which marks the termination of the motoring season. Thus we may expect to find prices higher before the quickly expiring motoring season is actually ended.

The move created surprise in some quarters, but it was generally expected as the larger companies faced continued demands from their dealers for protection against the onslaughts of the cut-price stations, who were cutting deeply into the distribution volume of the others.

The surplus of filling stations which serve the metropolitan area is proving a serious problem and one which company executives are lending every effort to solve. The necessity of maintaining so many retail outlets has been questioned long before this, but no definite action has been taken to stop the persistent opening of new stations which now are often found in clusters of from 6 to 12 in one lone block.

That these stations are unable to support themselves entirely from the sale of petroleum products is indicated in the growing tendency to convert them into something closely resembling a village general store. The latest move in this direction is the announcement of the Postal Telegraph Co. that telegrams may now be dispatched from a certain chain of filling stations, and the hint that other service station units plan to add this convenience to their offerings.

Lubs

Considerably more activity has marked this division of the market during the past few days, and factors are definitely optimistic regarding the outlook for the fall and winter months. The elimination of distressed stocks has done much to bring about the better tone which is shown.

Domestic consumers are returning to the market with confidence which has been lacking in past weeks. They are buying actively and volume is reaching normal proportions. In addition, inquiries from the export trade point to a resumption of this business on a satisfactory scale.

The readjustment of the market here has been due in large part to the conservation operations in Pennsylvania crude and to the movement of large quantities of cylinder oils which had been in storage in that area. Operators in this area are generally of the belief that there will be a well-sustained upward price movement throughout the balance of the year and that the market will go into 1931 on a strong footing. Red and pale oil prices hold unchanged with demand continuing on seasonal levels.

Wax

Sustained improvement in the demand for paraffin wax is reported as due to the activity of jobbing interests, keeping the market steady at the recently advanced levels. Inquiries made during the past few weeks for large volume shipments are expected to eventuate shortly.

Domestic consumption has shown a marked improvement and buying is reported on a more active scale with the result that stocks in refiners' hands show a consistent reduction, adding to the general stability of the market.

Fuel Oil

Bunker "C" fuel oil has moved in excellent volume against existing orders, and new business is being placed rather freely at the market price of $1.15 per barrel, in bulk, at refinery terminals. This price level has been firmly maintained, and certain small interests which attempted to disturb the general market by offerings under this figure are understood to have returned to that level, finding demand more than sufficient to maintain a firm market at this figure.

Continued conservation of crude, plus the greatly curtailed refinery operations which during the week ended September 6 were curtailed to 67 per cent of capacity, the lowest point on record since the American Petroleum Institute began its compilation of refinery statistics in June, 1929, will add greatly to the strength of the statistical position of the fuel oil market, it is pointed out here.

Although some well-posted factors here are rather doubtful concerning the possibility of a price advance in fuel this year, there is a widespread belief that the beginning of the near year will find fuel oil posted in East Coast ports at $1.25 for Grade "C."

For the first time in weeks, there were no exports of fuel oil reported from New York in the week ending September 6, as compared with 120,000 gallons during the week previous.

Diesel Oil

The market continues steady and unchanged at $2 per barrel, with consistent heavy withdrawals against existing contracts. There has been a well-defined adjustment of production to consumption in this area which has served to stabilize the market on a firm basis.

Sales in the New York harbor district are above those recorded at this time last year, it is reported, and it is understood that this satisfactory condition prevails as well at other principal East Coast ports.

Gas Oil

Posted prices continue unchanged and nominal, while some little hand-to-mouth business is reported in gas oil at prices ranging from a fraction to one-half cent per gallon on 28 plus recycled oil.

The bearish condition here has been further augmented by reported offerings of surplus gas oil from California sources at prices which offer little inducement to buyers here to operate at local levels.

Gulf Export Market

A lack of inquiries marked the past week in the Gulf export market, operators here declaring the period to be one of the quietest experienced in considerable time.

Export buyers are keeping close watch upon developments in the United States domestic market, and it is believed that there will be little business placed by them until they find a definite upward trend in our own markets.

When the effects of the greatly curtailed refinery operations become noticeable it is understood that there will be an immediate response from export buyers in the form of considerable buying of motor fuels for shipment abroad.

California Oil Receipts

Receipts of California crude and refined oils at Atlantic and Gulf Coast ports for the week ended September 6 totaled 701,000 bbls., a daily average of 100,143 bbls., compared with 512,000 bbls., a daily average of 73,143 bbls. for the previous week and a daily average of 81,710 bbls. for the month of August. Details follow:

	Bbls. of 42 gals.
At Atlantic Coast ports—	
Boston	55,000
New York	238,000
Philadelphia	308,000
Others	50,000
Total	701,000
Daily average	100,143
At Gulf Coast ports—	
All ports	None
At Atlantic and Gulf Coast ports—	
Total	701,000
Daily average	100,143
Daily average month of August	81,710

Petroleum Exports

Although new business in the export movement of refined petroleum products continues quiet in the local spot market, shipments against existing contracts were fairly heavy during the week ended September 6. The movement included 125,000 gallons of gasoline, as against 55,000 gallons in the previous week, and 848,000 gallons of refined petroleum, almost three times the shipments during the week ended August 30. There was a sharp drop in the volume of lubricating oil, shipments being less than one-third those of the previous week. Continued disturbances in the domestic market are keeping foreign buyers at a distance, and it is doubtful whether there will be any important business placed until conditions locally have improved to a basis where they may operate with confidence.

The following table shows principal exports of refined petroleum products from New York for the past three weeks (all figures in gallons unless otherwise noted):

	Week ended—		
	Sept. 6	Aug. 30	Aug. 23
Gasoline	125,000	55,000	480,000
Naphtha	470,000	530,000	.....
Kerosene	44,000	500,000	25,000
Fuel oil	.....	120,000	48,000
Lubricating oil	1,050,000	3,485,000	950,000
Petroleum, ref.	848,000	300,000	400,000
	Pounds		
Petrolatum	22,000	.....	12,000
Paraffin wax	561,000	1,100,000	510,000
Refined	36,000	420,000	15,000
Scale	260,000	230,000	140,000
Lubricating grease	1,117,000	875,000	540,000

Imports

Imports of crude and refined petroleum at the principal United States ports for the week ended September 6 totaled 2,012,000 bbls., a daily average of 287,429 bbls., compared with 1,878,000 bbls., a daily average of 268,285 bbls. for the preceding week and a daily average of 276,871 bbls. for the month of August. Details follow:

	Bbls. of 42 gals.
At Atlantic Coast ports—	
Baltimore	231,000
Boston	66,000
New York	1,019,000
Philadelphia	412,000
Others	150,000
Total	1,878,000
At Gulf Coast ports—	
Galveston district	65,000
New Orleans and Baton Rouge	30,000
Tampa	39,000
Total	134,000
Daily average	19,143
At Atlantic and Gulf Coast ports—	
Total	2,012,000
Daily average	287,429
Daily average month of August	276,871

Distribution of total imports is as follows:

Crude	1,481,000
Gasoline	243,000
Fuel oil	288,000

TWO PENN MEX WELLS

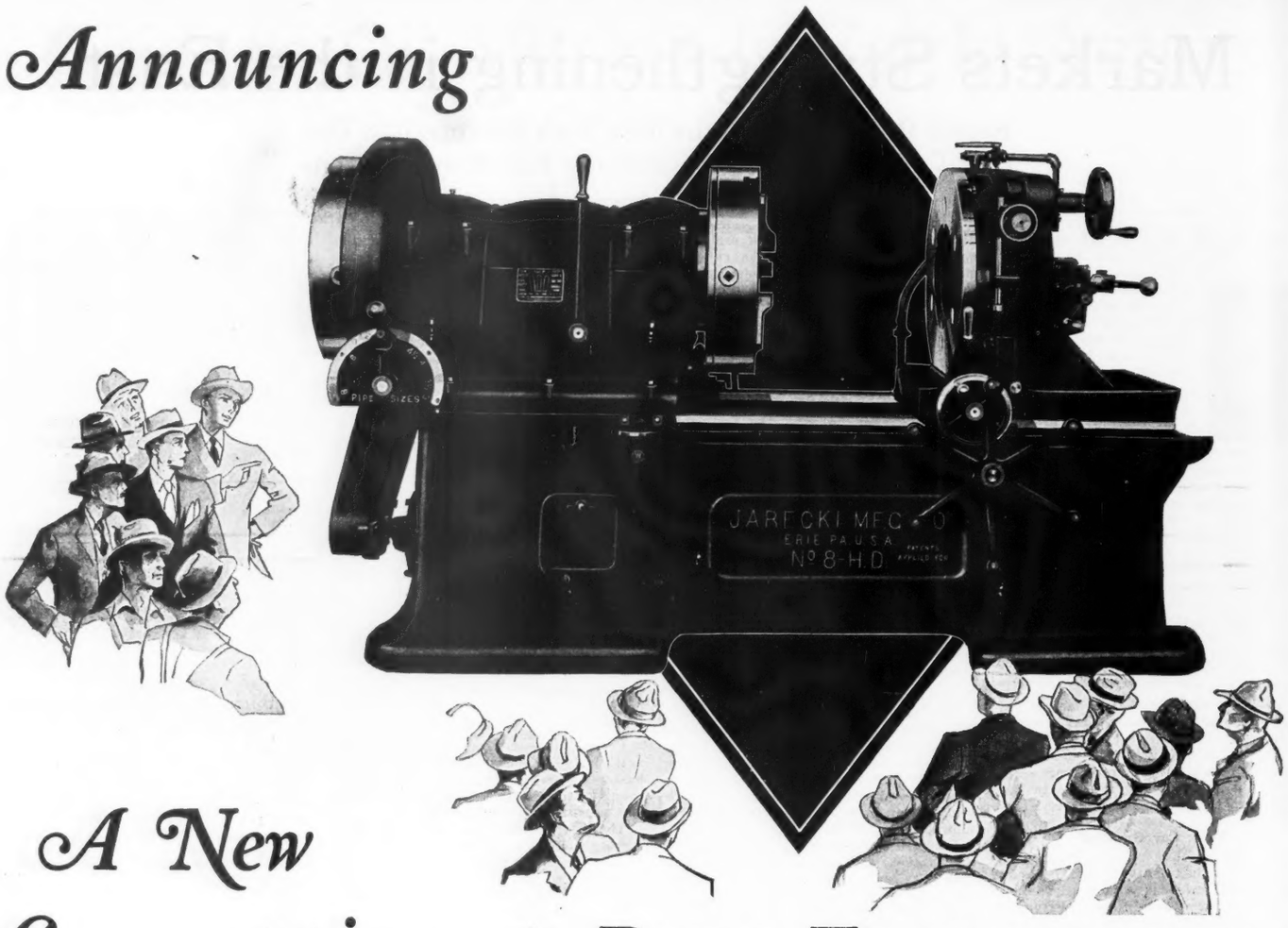
Penn Mex Fuel Co. completed Pasa Real wells No. 52 and No. 53, the former flowing 5,000 bbls. of crude oil daily at 2,577 feet, and the latter good for 2,000 bbls. a day at 2,530 feet.

Penn Mex Fuel Co., controlled by South Penn Oil Co., is producing currently 10,000 bbls. of crude oil daily from 28 wells in the Alamo district of Vera Cruz. Recent completion of two wells with combined flow of 7,000 bbls. daily increased the company's potential output in Mexico 70 per cent.

BRITISH COMPANY FORMED

CHATHAM, Ontario, Sept. 13.—British Oil Corp., Ltd., capitalized at $5,000,000 and financed in Great Britain, has been incorporated to operate in the Red Coulee international field. E. H. Cunningham-Craig, British geologist, is head of the company. Mr. Cunningham-Craig was recently in Canada when he investigated the Red Coulee Field and the De Winton structure and secured extensive acreage. The project marks the first attempt of a purely British organization to enter the border oil field, which now has an estimated production of 1,400 bbls. a day.

Announcing



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Manufacture of Natural Gasoline

Progress in Research Work on Condensation Of Hydrocarbon Gases

The results of additional research work on the condensation of methane, ethane, butane, propane and ethylene were outlined in a paper by S. C. Lind and George Glockler before the American Chemical Society which met in Cincinnati in the past week. The work has been in progress at the University of Minnesota for several years and the subject has become of such importance as to include it as one of the research problems being investigated under the American Petroleum Institute program with money donated by the Universal Oil Products Co.

In the previous papers it was shown that condensation products of methane includes oils and solids closely resembling those recovered by the natural distillation of crude. This suggested a practical application of these laboratory findings and it was decided to study the condensation reactions of other simple hydrocarbon gases present in natural gas since natural gas is a mixture of these and would serve as the logical raw material. The results of this work shows results similar to those found when using methane as the source.

It was also shown that the results of condensation were similar when carried out by electrical discharges in an ozonizer as when produced by ionization due to alpha particles.

Apparatus Used

The apparatus used to study these condensations consisted chiefly of an all-glass ozonizer, a Liebig condenser and a manometer. The system was of the circuit type and circulation of the gas within the system was brought about by thermo-syphonic action. This was induced by heat given off by the electrically operated ozonizer and the condenser acts as the cool leg of the system. The electrical set-up consisted of a Thordarson transformer which would furnish about 18,000 volts to the ozonizer with 94 volts and 7.4 ampers in its primary. The electrical conditions were kept constant at these valves during all the experiment. The first series of experiments consisted of runs of 8½ hours duration. The pressure changes were observed during the whole period and after the conclusion of each experiment the remaining gases were analyzed for hydrogen, methane, ethane, propane, butane and pentane by fractional distillation, beginning at liquid air temperatures. The hydrogen in the hydrogen-methane mixture was removed by diffusion through a palladium tube. The remaining methane was checked by combustion and a correction applied for any ethane that might have been pumped off with the hydrogen methane fraction. Ethane was distilled off at —150° C., propane at —120° C., and butane at —90° C. The remaining gas was taken to be pentane.

The liquid composition (empirical formula) could be determined from these gas analyses by constructing an "atomic balance sheet." It is possible to find the number of carbon and hydrogen atoms that must have gone into the liquid condensate from the amount of hydrocarbon used, its composition and the analyses of the resulting gases.

These gases were distilled into the apparatus and any permanent gases were pumped off. The experimental results are shown in Table 1 which contains the average of at least two experiments carried out with each gas. It was always possible to obtain graphs of the "pressure-time relation" which checked very satisfactorily indeed, showing that the experiments are entirely reproducible.

(Continued on Page 154)

SIMPLE HYDRAULICS PROBLEMS IN GASOLINE PLANT OPERATION

By T. F. Williams
Columbian Gasoline Corp.*

In this paper on hydraulics the writer will endeavor to give in succeeding paragraphs solutions to a few of the many problems in hydraulics that are encountered in building and operating an absorption gasoline plant.

When water flows through a pipe of uniform cross section the quantity passing any section in a given interval of time depends on the area of the cross section and the velocity with which the water flows. It is usually assumed that all the particles of water have the same velocity; but if they have different velocities the means may be taken as the velocity of the flow, but in pipes of varying diameters, and since water is known to be practically incompressible, the quantity flowing past any section must be the same as the quantity flowing past any other section in the same interval of time, provided the pipe is full of water; therefore, if the cross section varies, the velocity must also vary, where the cross section is least the velocity is greatest, and where the cross section is greatest the velocity is least.

Velocities

Assuming that the pipe always remains full, the velocities at various sections of the pipe vary inversely as the areas of those sections; for example:

It is known that the velocity through a part of a pipe 4 inches in diameter is 6 feet per second. (a) What is the velocity through an enlarged part of the pipe whose diameter is 5 inches? (b) What is the velocity through a valve that has an opening of 3½ square inches?

Solution—Let A1, A2 and A3 denote the areas of successive cross sections, and V1, V2 and V3 denote the corresponding velocities in feet per second, then:

$$A1 = 4^2 \times .7854,\ A2 = 5^2 \times .7854 \text{ and } A3 = 3.5 \text{ square inches}$$

It is known that V1 = 6 feet per second. It is also known that the volume of any section is equal to the area of that section times the velocity; therefore, it stands to reason that the velocity of any section is equal to the volume divided by the area, and as the same volume must pass through the Sections A2 and A3 that passes through the Section A1, the formula becomes:

$$V2 = .7854 \times 5^2 = 6 \times .7854 \times 4^2$$

In transposing the common factor, .7854 cancels, then the formula becomes:

$$V2 = 6 \times \frac{4^2}{5^2} = 3.84 \text{ feet per second}$$

$$V3 \times 3.5 = 6 \times .7854 \times 4^2$$

$$V3 = \frac{6 \times .7854 \times 16}{3.5} = 21.55 \text{ ft. per sec.}$$

It is seen from the above example that the velocities may vary inversely as the area of the sections when the volume remains constant.

Example 2—The hydrostatic head is 20 feet and the pressure head at a given section is 12 feet, what is the velocity at the section?

Note—The pressure head is found by the use of a gauge known as a piegometer, which is nothing more than a tube inserted in the pipe at right angles to the current that the water is flowing in the pipe. The height that the water rises in the tube is the pressure head.

Solution—Let v denote the velocity in feet per second; let g denote the acceleration of gravity = 32.16; let H denote the hydrostatic head; let P denote the pressure head:

$$H - P = \text{velocity head} = \frac{v^2}{2g}$$

$$\frac{v^2}{2g} = 20 - 12 = 8 \text{ feet, therefore,}$$

$$v^2 = 2g \times 8 \text{ or } v = \sqrt{2g \times 8} = \sqrt{2 \times 32.16 \times 8} = 22.684 \text{ feet per second}$$

Velocity From Orifice

Flow of water through an orifice:

In order to obtain the actual velocity issuing from a circular standard orifice it is necessary to multiply the theoretical velocity, which is computed by the formula $v = \sqrt{2gh}$, by the coefficient of velocity, that is, the number by which the theoretical velocity must be multiplied in order to obtain the actual maximum velocity. This value is usually taken as .98 and is represented in following formulas as (C' S).

V = theoretical velocity in feet per second; V' = actual velocity in feet per second; C' = coefficient of velocity.

Example 1:

What is the actual velocity of discharge from a small standard orifice in the side of a tank, if the head is 10 feet?

Solution:

$$V' = C'\sqrt{2gh} = .98\sqrt{2 \times 32.16 \times 10} = 24.85 \text{ feet per second}$$

It is quite evident that the contraction of the jet issuing from an orifice and the reduction of the theoretical velocity at the smallest cross section both tend to reduce the quantity of water flowing through an orifice as calculated from the formulas, Q = AV and $V = \sqrt{2gh}$. Let Q' denote the theoretical discharge and Q the actual discharge; then the ratio $\frac{Q}{Q'}$ is called the coefficient of discharge. Denoting the coefficient by (K); Q = KQ'.

The value of K may be taken as .61, therefore:

Q = KQ' = .61 A2gh; A = area of orifice in square feet; Q = discharge in cubic feet per second; h = head on center of orifice in feet.

Example 1:

What is the actual discharge from a circular standard orifice 2 inches in diameter under a head of 10 feet?

Solution—The area in feet of a 2-inch diameter circle is:

$$\frac{.7854 \times 2^2}{144} = \frac{.7854 \times 4}{144} = .0218 \text{ sq. ft.}$$

$$Q = KA\sqrt{2gh} = .61 \times .0218 \times \sqrt{2 \times 32.16 \times 10} = .3375 \text{ cu. ft. per sec.}$$

Rectangular Weirs

There are types, two, of rectangular weirs; those with and those without end contractions. Due to the fact that weirs with end contractions are more extensively used than those without end contractions, succeeding paragraphs will be dedicated to the discussion of the former.

The flow discharged over a weir can be computed by means of the following formulas and table of coefficients if the dimensions of the notch and the head on the crest of the weir are known.

Let L = length of weir in feet; let H = measured head in feet; let V = velocity in feet per second with which water approaches weir; let h = head equivalent to the velocity with which water approaches weir; let K = coefficient of discharge; let Q' = theoretical discharge in cubic feet per second; let Q = actual discharge in cubic feet per second.

(The value of the coefficient (k) is found in the table attached to this paper.)

The actual discharge from weirs with end contractions, and considering the velocity of approach, is given by the following formula:

$$Q = 5.347KL\sqrt{H + 1.4h^2} \quad (1)$$

If there is no velocity of approach, this becomes:

$$Q = 5.347KL\sqrt{H^2} \quad (2)$$

Example 1:

What is the discharge of a ditch or canal if the length of the weir is 2 feet, the head 9 inches and the velocity of approach equals 0?

Solution—Apply formula (2).

Nine-inch head = .75-foot head; therefore, find the value of K for weir 2 feet long with a head of .75 foot. As the table shows .70 and .80-foot heads, but no .75-foot, it is necessary to find the

(Continued on Page 153)

*Plant Foremen's meeting.

ARGUS PRODUCTION CO. PLANS GASOLINE PLANT

The Argus Production Co., with headquarters in Dodge City, Kans., has announced plans for the construction of a natural gasoline plant in Stevens County, Kansas. The plant, which will cost approximately $750,000, is to be located about 4 miles from Hugoton.

The Argus company has been active for some time in Stevens and Morton Counties which are located in the extreme southwest part of Kansas. A large gas production has been obtained, part of which is to be moved by a pipe line now under construction by the Lone Star Gas Co. interests. Two other major gas pipe line projects now under construction will also pass within a short distance of the Argus company production.

The gas available is of low gasoline content. The plant will be enlarged whenever necessary to take care of gasoline extraction from all the gas available from the Argus properties. It is estimated there will be an open capacity of 500,000,000 feet of gas from the gas field this fall.

START VAN PLANT

FORT WORTH, Tex., Sept. 15.—The Pure Oil Co. has completed its gasoline plant in the Van Pool, Van Zandt County, East Central Texas, and turned gas from the lines in the field into the station on the morning of September 11. A 24-inch main gathering line serves the field, with smaller tap lines running off from this line to the various wells as they are completed. This is the first plant in the field.

Wells in the Van Pool do not produce much gas, but it is sweet so that the natural gasoline will not be difficult to treat. The plant is equipped with 14 compressors and may be enlarged if necessary.

HOBBS PLANT STARTS UP

The Shell Petroleum Corp. has practically completed its new natural gasoline plant in the Hobbs Field of New Mexico. Operation will begin next week and is expected to handle 15,000,000 feet of gas per day. The gasoline content of the gas in this area is approximately 2 gallons per 1,000 and the output of the plant is expected to range between 30,000 and 35,000 gallons per day.

Brief Items for Petroleum Refiners

California Gasoline Advanced and Crude Schedules Reduced

LOS ANGELES, Calif., Sept. 15.—Following the protest of several independent refiners in this territory, the Standard Oil Co. of California today made effective a 1-cent advance in gasoline prices at refineries and reductions in crude oil prices averaging from 8 to 12 cents a barrel. Independent refiners have recently claimed that the gasoline market was out of line wtih crude oil schedules so that it was impossible to operate refineries profitably.

In connection with its action, the Standard of California made the following statement:

"Statements have been made by independent refiners to government officials, to the public and to this company that present prices for gasoline and prevailing prices for crude oil do not permit refiners in California to operate at a profit and that there must be either a decrease in the cost of the raw material or an increase in the price of the refined product or a decrease in labor costs; this last suggestion, even though it might be partially effective, should not be considered in view of existing general conditions. The statements referred to are believed to be supported by the facts. The condition is the result of an uncompleted program which was begun last spring. In March, 1930, as a result of the successful conclusion of the conservation program by California producers, the price offered by this company for the average grade of refinable crude oil was advanced 20 to 25 cents per barrel.

"It was contemplated that this should be followed by a corresponding increase in the company's price for refined products. Before this advance could be made effective unsettled marketing conditions for refined products developed and culminated in the recent disastrous price war. All refiners have therefore found themselves in the predicament pointed out by

(Continued on Page 153)

PHILLIPS INTERESTED IN GREAT LAKES LINE

Commenting upon the progress of the Phillips Pipe Line Co. from Texas to St. Louis, Frank Phillips stated that about 100 miles of the line is already laid and that pipe shipments are now being received at the rate of about 10 miles per day. The line will be laid from now on as fast as shipments are received. All equipment has been ordered and practically all right of way obtained. Terminal facilities have all been settled.

It is anticipated the line will be completed and ready for operation by the middle of the winter.

Mr. Phillips stated further that arrangements have been agreed upon for Phillips Pipe Line Co. to obtain an interest in the Great Lakes pipe line which will have its principal terminals at Omaha, Kansas City, Des Moines, Chicago and Minneapolis.

PURCHASE WEWOKA PLANT

The Gwin Drilling Co. of Oklahoma City, Okla., has leased the skimming plant at Wewoka, Okla., from the Wewoka Refining Co. The Gwin company leased the plant to provide an outlet for crude oil it controls in the Asher and St. Louis Pools of Oklahoma.

The plant has a capacity of approximately 2,000 bbls. daily and will handle at the start from 1,200 to 1,500 bbls. daily. The plant was built last year by Wewoka capital but has never been operated.

ANNOUNCE ADDITIONAL DETAILS OF HYDROGENATION OPERATION

BROOKLYN, N. Y., Sept. 14.—Operations of the first commercial petroleum hydrogenation plant in the world at Bayway, N. J., by Standard Oil Co. of New Jersey, have exceeded expectations thus far, although not more than half of the unit has been completed and utilized since operations were inaugurated August 7. While operations have been fully satisfactory, the New Jersey company says no products made by the process will be available for the market for some time as the operation of the plant as yet is on a development basis.

Thus far, during the development stage of the Bayway hydrogenation plant, only kerosene has been produced. However, the unit is designed to produce various products although not simultaneously. Should demand for a certain product diminish as the consumption of kerosene diminished through the introduction of electricity, it is stated it would not be necessary to scrap the equipment, which could be used for the processing of another refined petroleum product. Since with hydrogenation, it is possible to produce any desired petroleum product with little residue, it is expected that this process will in time make possible the proper balance between the production of light and heavy oils, the company's announcement states.

Company's Statement

It is for this reason, says the company, that hydrogenation is regarded as the remedy for one of the distressing economic ills of the petroleum industry. The present methods of refining leave too large a quantity of heavy products to be marketed profitably, the statement says, but with the demand for gasoline steadily increasing the refiner up to now has found it impossible to increase his gasoline output without similarly increasing his production of heavy ends, thereby aggravating the situation by his own procedure. By utilization of the hydrogenation process the refiner can produce high yields of finished products with very little residue of fuel oil and asphalt.

Operation of the Bayway hydrogenation unit to date has shown that a lubricating oil comparing favorably with the highest grade made from Pennsylvania crude petroleum can be made from almost any crude oil. The quality of lubs made by hydrogenation, the company says, has been thoroughly tested. The report emphasizes that through hydrogenation refiners will henceforth be absolutely independent of special grades of crude oil for the production of high grade lubricants. Hitherto the production and quality of lubricating oils have been largely dependent upon the type of crude oil available. There is one drawback to the manufacture of lubricating oils by hydrogenation, early results at Bayway indicate. The large quantity of paraffin wax produced by this method, amounting to as high as 50 or 60 per cent, is expected to act as a deterrent to extensive

(Continued on Page 148)

LONGSHORE APPOINTED TO SUCCEED C. M. HIGGINS

NEW YORK, Sept. 15.—C. H. Longshore, well-known petroleum marketer and export market authority, has been appointed manager of gas oil sales for Standard Oil Co. of New York, succeeding C. M. Higgins, who retired a short time ago as vice president, director, and manager of gas oil sales.

Mr. Longshore has been prominently identified with the oil industry in the East for the past 25 years. He was born at Langhorne, Pa., and entered the employ of the Union Petroleum Co. in Philadelphia in 1905, later becoming manager of that company's refinery at Wellsville, N. Y. He then went abroad to handle export sales for the Union Petroleum Co. Upon acquisition of that company by Sinclair, Mr. Longshore became vice president of Sinclair refining and spent a number of years abroad developing export markets for that company.

Upon the formation of the Acewood Petroleum Corp. here, Mr. Longshore became vice president and treasurer of that company and went with the Richfield Oil Corp. of New York in a similar capacity when that company was formed last year through purchase and consolidation of Acewood and Walburn Petroleum companies by Richfield. Mr. Longshore resigned from Richfield of New York a short time ago to become associated with Socony.

DONNELLY-JENKINS CO.

CHICAGO, Sept. 16.—The newly formed Donnelly-Jenkins Co. is a consolidation of the patents formerly owned by the Donnelly and the Jenkins companies. Officers are: President, J. F. Donnelly; vice president, U. S. Jenkins; treasurer, T. S. Black, and secretary, L. G. Paddock. The new company is now operating at the former offices of the Jenkins Petroleum Process Co.

MAY START CONSTRUCTION OF FRENCH REFINERY SOON

The Franco-American Refining Co. which is said to be controlled by oil companies in the United States has made application in France to build a refinery and dockage at Rouen, France. The entire project will represent an expenditure of $10,000,000. The matter of a permit for the construction of the plant will be considered this fall by the French Parliament and if favorable action is secured, work will start immediately. The company may also build another refinery on the Tancarville Canal.

The Standard Oil Co. of New Jersey, Gulf Oil Corp. and the Atlantic Refining Co. are interested in the Franco-American company. The plants when built will furnish refined products for customers of these companies in France.

Decision to build the refinery which was first announced last spring was due to the high import tax placed on refined petroleum products by the French government in order to encourage the development of domestic refining.

OIL MARKET COMPANIES PERMANENTLY ENJOINED

SAN FRANCISCO, Calif., Sept. 15.—Eighteen major oil marketing companies in this State today were permanently enjoined from agreeing on prices for gasoline in an order by Judge A. F. St. Sure, of the United States District Court.

The decree to which the defendant companies consented is the result of the price war last year. The Government brought the price fixing charge last February. The Government at first outlined a policy of seeking indictments of officials of the companies, but found it more feasible to prosecute under a civil suit, which never was brought to trial, but was settled through a series of conferences.

OLD DUTCH TO LAY LINE FROM MT. PLEASANT POOL

MUSKEGON, Mich., Sept. 16.—Construction of a new crude oil gathering line in the Leaton Pool, located about 8 miles northwest of the Mount Pleasant proved area, was announced today by John Borden, president of the Old Dutch Refining Co. of Muskegon. A maximum of 1,000 bbls. a day of Dundee crude to be shipped by tank car to the Muskegon refinery will be purchased at $1.10 per barrel, tanks to be strapped at 98 per cent, it was stated.

The Old Dutch Construction Co., operators of the Old Dutch gathering lines in the Muskegon Field, will start laying the new Mount Pleasant area line immediately and it is expected that it will be ready to run oil about October 1. The Old Dutch company will take all or part of the production of operators in the pool within the 1,000-bbl. limit.

Eight oil wells ranging from 25 to 540 bbls. initial daily production have been brought in by five operators in the Leaton Pool during the past three months. These operators include the New York Petroleum Royalty Corp., which opened the field, the Ohio Producing & Refining Co., the Wittmer Oil & Gas Co., the Gordon Oil Co., and Gibson, Johnson & Borden, Inc., of Muskegon. Present daily production of the pool is estimated to be more than the minimum of 1,000 bbls. and it was announced last week that only 25 per cent of the potential daily flow would be accepted by the Pure Oil Pipe Line Co., which has been taking the oil since the first well came in.

W. K. HOLMES WILL HEAD CALIFORNIA OPERATIONS

HOUSTON, Tex., Sept. 13.—W. K. Holmes, for several years superintendent of The Texas Company's refinery at Port Arthur, Tex., has been transferred to Los Angeles, Calif., where he has been promoted to vice president and general manager of The Texas Company of California.

Succeeding Mr. Holmes as superintendent at Port Arthur is T. G. Dellinger, formerly first assistant superintendent. Other changes in the personnel are W. E. Repschlaeger, made first assistant superintendent; and F. L. Wallace, second assistant superintendent and Mike Helpern, manager of the refining department.

In addition, The Texas Company has made known the transfer of L. F. W. Wilking of Houston to Casper, Wyo., where he will be superintendent of the refinery there. He will be succeeded at Houston by J. S. Worder of Amarillo.

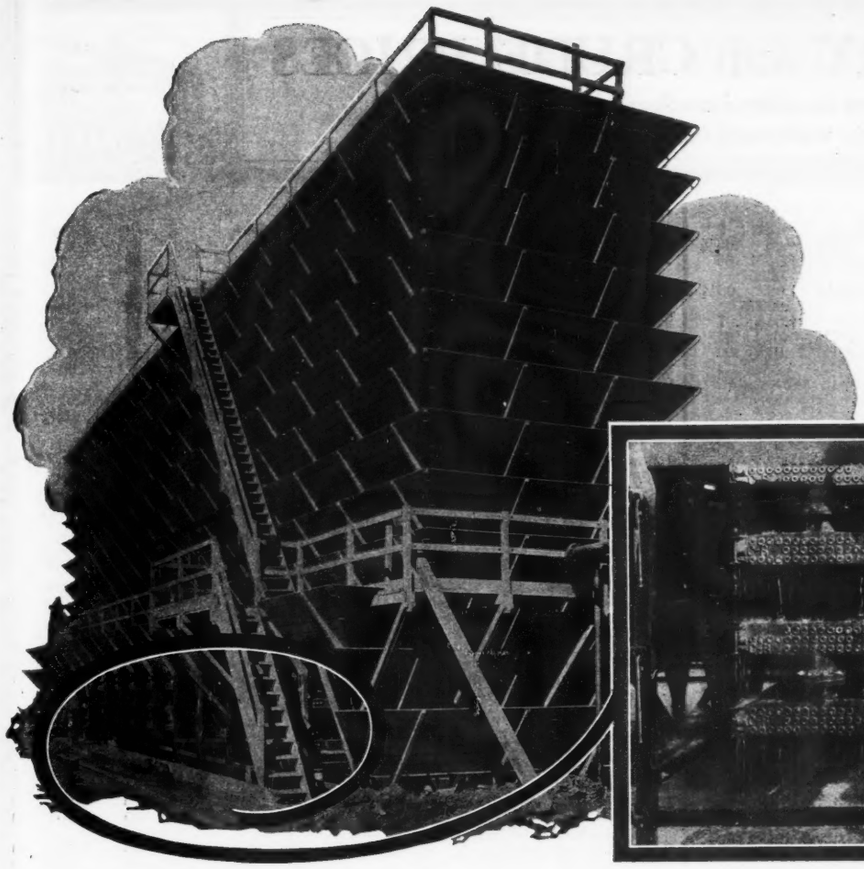
ORGANIZE MARATHON COMPANY

The refining and marketing divisions of Mid-Kansas Oil & Gas Co. recently acquired from the Transcontinental Oil Co. will be operated under the name of the Marathon Oil Co., according to an official announcement from the Tulsa headquarters.

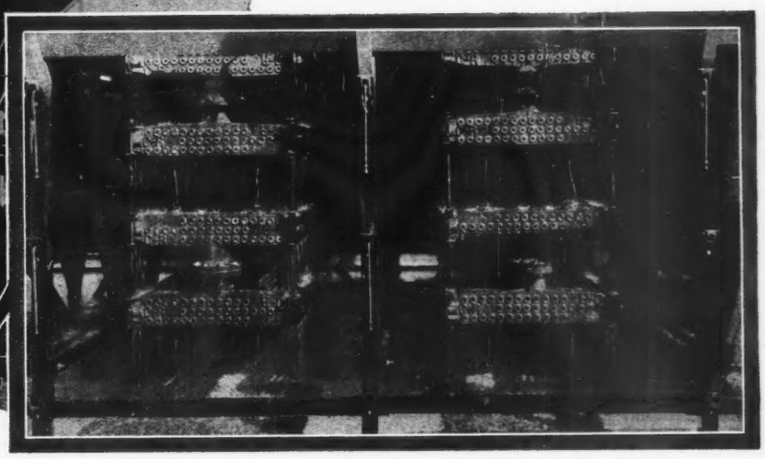
The Transcontinental company used the name of "Marathon" as the trademark for its refinery products and this trade name will be continued by the new owners. The new company will take over all the subsidiary marketing companies formerly operated by the Transcontinental company.

DEVLIN MADE CHAIRMAN

SAN ANTONIO, Tex., Sept. 15.—A. J. Devlin, vice president of the Grayburg Oil Co., has been appointed chairman of the refiners' committee of the Independent Petroleum Association of Texas.



The G-R Bentube Section



Hard cooling water does not scale up this atmospheric cooler

The G-R Bentube Section is patented and it is our intention to prosecute all infringements. Suits, charging infringement of our patent No. 1,617,083, have been brought in the U. S. District Courts at Wilmington, Delaware, and New York, New York.

Booths 42-43
Oklahoma Bldg.

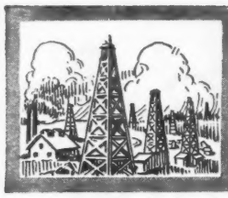
SCALE deposited on G-R Bentube Sections cannot build up sufficiently to reduce the cooling effect below rated capacity. Whenever the temperature of the patented bowed tubes changes, the resulting expansion or contraction correspondingly changes their curvature, causing the scale to crack and flake off.

This action is so thorough that in most cases scale is continuously shed during normal operation, and even the most tenacious scale can be dislodged without the necessity of hand-scaling by simply interrupting the flow of cooling water or hot fluid for a few moments and then starting up again so as to obtain quick temperature change.

This exclusive feature is one of the many important advantages of G-R Bentube Sections that have made them widely popular for condensing or cooling service in connection with cooling towers, sprays, or for submerged operation. Write for bulletin describing Bentube Sections in detail.

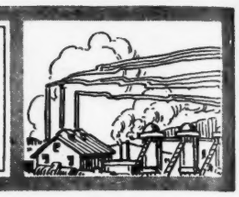
THE GRISCOM-RUSSELL COMPANY
285 Madison Avenue, New York
Branches in all oil centers.

Griscom-Russell
Heat Transfer Apparatus



REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.



GASOLINE AND NAPHTHA

OKLAHOMA (Group 3)—	Sept. 16		Sept. 9		Sept. 2	
50-52 450 endpoint	.06	.06¼	.06	.06¼	.06	.06¼
56-58 450 endpoint	.06	.06¼	.05¾	.06	.05¾	.06
*58-60 437 endpoint (U. S. Motor)	.0633		.0624		.0625	
*60-62 437 endpoint	†.06¼	.06½	†.06	.06¼	†.06	.06¼
*60-62 400 endpoint	.0688		.0681		.06875	
*64-66 375 endpoint	.0725		.07		†.06¾	.07
68-70 360 endpoint	.07¼	.07½	.07	.07½	.07	.07¼
64-66 437 endpoint (blend)	.05¾	.06¼	.05¾	.06	.05½	.06
NORTH TEXAS—						
50-52 450 endpoint	.06	.06¼	.05¾	.06	.05⅝	.05¾
58-60 450 endpoint	.06	.06¼	.05¾	.06	.05½	.05¾
58-60 437 endpoint (U. S. Motor)	.06⅛	.06¼	.06	.06¼	.05½	.06
60-62 400 endpoint	.06¼	.06½	.06¼	.06½	.06	.06¼
64-66 390 endpoint	.06⅜	.06½	.06⅜	.06½	.06¼	.06½
64-66 375 endpoint	.06⅝	.06¾	.06⅝	.06¾	.06½	.06¾
68-70 360 endpoint	.07	.07¼	.07	.07¼	.06¾	.07¼
64-66 437 endpoint (blend)	.05¾	.06	.05¾	.06	.05½	.06
*NORTH LOUISIANA—						
58-60 437 endpoint (U. S. Motor)	.07		.06¾	.07	.06¾	.07
*ARKANSAS—						
58-60 437 endpoint (U. S. Motor)	.07		.06¾	.07	.06¾	.07
PENNSYLVANIA—						
52-54 Naphtha	.06¾		.06¾		.06¾	
54-56 Naphtha	.06¾	.07	.06¾	.07	.06¾	.07
58-60 Gasoline	.07	.07¼	.07	.07¼	.07	.07¼
60 Gasoline	.07¼	.07½	.07¼	.07½	.07¼	.07½
62 Gasoline	.08		.08		.08	
64 Gasoline	.08		.08		.08	
68-70 350 endpoint gasoline	.08¾		.08¾		.08¾	
CALIFORNIA—						
†58-60 437 endpoint (U. S. Motor) domestic	.09	.10	.08	.09	.08½	.09¼
†60-62 400 endpoint domestic gasoline	.09¾	.11	.09	.10	.09¾	.10¼
CHICAGO DISTRICT (Based on Group 3)—						
50-52 450 endpoint (Naphtha)	.06	.06¼	.05¾	.06	.05½	.05¾
56-58 450 endpoint	.06	.06¼	.05¾	.06	.05½	
58-60 437 endpoint (U. S. Motor)	.06¼	.06½	.06	.06¼	.05⅝	.06
60-62 400 endpoint	.06⅜	.06⅝	.06¼	.06½	.05¾	.06¼
64-66 375 endpoint	.06¾	.07	.06¾	.07	.06½	.06¾
68-70 360 endpoint	.07	.07¼	.07	.07¼	.07	.07¼
64-66 437 endpoint (blend)	.06¼	.06½	.06	.06½	.05½	.06
GULF COAST (Export)—						
58-60 U. S. Motor	.07¼	.07½	.07	.07½	.07	.07½
60-62 400 endpoint	.08	.08½	.08	.08½	.08	.08½
61-63 390 endpoint	.08½	.09	.08½	.09	.08½	.09
64-66 375 endpoint	.09	.09½	.09	.09½	.09	.09½

*Weighted average prices September 15, 8 and 1 as reported by representative refiners. Sales to jobbers only. †No sales reported. Prices show general market.

*Louisiana, Arkansas, Mississippi and East Texas delivery. †For local consumption.

NATURAL GASOLINE

OKLAHOMA (Group 3)—	Sept. 16	Sept. 9	Sept. 2
Grade A, 72-79.9, 375 e.p., rec. 90%	.05¾	.05½	.05½
Grade AA, 80-87.9, 375 e.p., rec. 90%	.05¾	.05½	.05½
Grade B, 76-83.9, 375 e.p., rec. 85%	.05¾	.05½	.05½
Grade BB, 84-92, 375 e.p., rec. 85%	.05¾	.05½	.05½
Grade C, 80-92, 375 e.p., rec. 78%	.05¾	.05½	.05½
NORTH TEXAS—			
Grade A, 72-79.9, 375 e.p., rec. 90%	.05¾	.05½	.05½
Grade AA, 80-87.9, 375 e.p., rec. 90%	.05¾	.05½	.05½
Grade B, 76-83.9, 375 e.p., rec. 85%	.05¾	.05½	.05½
Grade BB, 84-92, 375 e.p., rec. 85%	.05¾	.05½	.05½
Grade C, 80-92, 375 e.p., rec. 78%	.05¾	.05½	.05½
NORTH LOUISIANA—			
Grade AA, 80-87, 375 e.p., rec. 90%	.05¾ .06	.05⅝ .05¾	.05⅝ .05¾
Grade BB, 84-92, 375 e.p., rec. 85%	.05¾	.05⅝	.05⅝
Grade C, 80-92, 375 e.p., rec. 78%	.05¾	.05⅝	.05⅝
CALIFORNIA—			
75-78, 375-390 endpoint	.07 .08	.07 .07½	.07 .07½
CHICAGO DISTRICT (Based on Group 3)—			
Grade A, 72-79.9, 375 e.p., rec. 90%	.05¾	.05½	.05½
Grade AA, 80-87.9, 375 e.p., rec. 90%	.05¾	.05½	.05½
Grade BB, 84-92, 375 e.p., rec. 85%	.05¾	.05½	.05½

BURNING OIL

OKLAHOMA (Group 3)—	Sept. 16		Sept. 9		Sept. 2	
41-43 water white kerosene	.03¼	.03¾	.03¼	.03¾	.03⅛	.03½
42-44 water white kerosene	.03½	.04	.03½	.04	.03½	.03¾
NORTH TEXAS—						
41-43 water white kerosene	.03	.03¼	.03⅛	.03¼	.03	.03¼
40-41 water white kerosene	.02⅞	.03	.02⅞	.03	.02⅞	.03
*NORTH LOUISIANA—						
41-43 water white kerosene	.04¼	.04½	.04	.04¼	.04	.04¼
*ARKANSAS—						
41-43 water white kerosene	.04¼	.04½	.04	.04¼	.04	.04¼
PENNSYLVANIA—						
43 Kerosene prime white	.04½		.04½		.04½	
45 Kerosene water white	.05		.05		.05	
46 Kerosene water white	.05	.05¼	.05	.05¼	.05	.05¼
300 Mineral Seal	.05½		.05½		.05½	
CALIFORNIA—						
38-40 water white Kero. (high burning test)	.04¾	.05¾	.04½	.05½	.04¾	.05¼
CHICAGO DISTRICT (Based on Group 3)—						
41-43 water white kerosene	.03	.03¼	.03	.03¼	.03	.03¼
42-44 water white kerosene	.03⅜	.03⅝	.03¼	.03½	.03¼	.03½
GULF COAST (Export)—						
41-43 prime white	.06		.06		.06	
41-43 water white	.07		.07		.07	

*Louisiana, Arkansas, Mississippi and East Texas delivery.

FUEL OIL

OKLAHOMA (Group 3)—	Sept. 16		Sept. 9		Sept. 2	
Below 18 Fuel Oil, per bbl.	.45	.50	.45	.50	.45	.50
18-22 Fuel Oil, per bbl.	.47½	.52½	.47½	.50	.47½	.50
20-22 Fuel Oil, per bbl.	.50	.57½	.50	.57½	.50	.57½
22-26 Fuel Oil, per bbl.	.55	.60	.55	.60	.55	.60
24-26 Fuel Oil, per bbl.	.60	.65	.60	.65	.60	.65
26-30 Fuel Oil, per bbl.	.65	.75	.65	.75	.67½	.72½
28-30 Fuel Oil, per bbl.	.70	.80	.70	.80	.75	.80
32-36 Gas Oil (industrial)	.02⅛	.02¼	.02⅛	.02¼	.02⅛	.02¼
32-36 Gas Oil (straw color, high cold test)	.02¼	.02½	.02¼	.02½	.02¼	.02½
32-36 Gas Oil (straw color, low cold test)	.02⅝	.02¾	.02½	.02¾		
36-38 Distillate	.02¾	.02⅞	.02⅝	.02¾	.02⅝	.02¾
38-40 Straw Distillate	.02¾	.03¼	.02¾	.03¼	.02¾	.03
38-40 Straw Distillate (low cold test)	.03	.03¼				
NORTH TEXAS—						
Below 20 Fuel Oil, per bbl.	.40	.50	.40	.50	.40	.50
24-26 Fuel Oil, per bbl.	.60	.65	.60	.65	.60	.65
32-36 Gas Oil (industrial)	.02⅛	.02¼	.02⅛	.02¼	.02	.02⅛
38-40 Straw Distillate	.02¾	.03	.02¾	.03	.02¾	.03
*NORTH LOUISIANA—						
18-20 Fuel Oil, per bbl.	.80	.85	.75	.80	.75	.80
30-32 Gas Oil	.02⅞		.02⅞	.02¾	.02⅞	.02¾
*ARKANSAS—						
33-36 Distillate	.02¾	.03	.02¾	.03	.02¾	.03
30-32 Gas Oil	.02¾	.02⅞	.02⅝	.02½	.02⅝	.02½
16-22 Refinery Fuel Oil, per bbl.	.65	.70	.60	.70	.60	.70
GULF COAST (South Texas)—						
Gas Oil	.03¾	.04	.03¾	.04	.03¾	.04
Bunker C Fuel (cargo lots), per bbl.	.75	.80	.75	.80	.75	.80
Bunker C Fuel (small lots)	1.05	1.10	1.05	1.10	1.05	1.10
PENNSYLVANIA—						
30-34 Fuel Oil	.03⅝		.03⅝		.03⅝	
36-40 Fuel Oil	.04		.04		.04	
CALIFORNIA—						
33-36 Distillate	.02	.02½	.02¼	.02½	.02¼	.02½
26-32 Distillate	.01¾	.02	.01¾	.02	.01¾	.02
15-20 Fuel Oil, Bunker (at tidewater)	.65	.80	.65	.75	.65	.75
15-20 Fuel Oil (cargo lots), per bbl.	.60	.75	.60	.70	.60	.70
27 plus Diesel, per bbl.	.75	.90	.80	.90	.80	.90
CHICAGO DISTRICT (Based on Group 3)—						
22-26 Fuel Oil, per bbl.	.55	.60	.55	.60	.55	.60
18-22 Fuel Oil, per bbl.	.45	.52½	.42½	.50	.42½	.50
28-30 Fuel Oil, per bbl. (zero)	.77½	.82½	.75	.80	.75	.80
32-36 Gas Oil (zero)	.02⅜	.02⅞	.02⅜	.02¾	.02⅜	.02¾
32-36 Gas Oil (industrial)	.02⅛	.02⅞	.02⅛	.02¼	.02⅛	.02¼
38-40 Straw Distillate	.02¾	.03	.02¾	.03	.02¾	.03

*Louisiana, Arkansas, Mississippi and East Texas delivery.

LUBRICATING OIL AND WAX

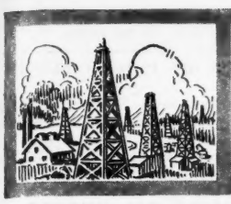
OKLAHOMA (Group 3)—	Sept. 16		Sept. 9		Sept. 2	
100 vis., 2 color, 20-25 cold test	.06	.06½	.06	.06½	.06	.06½
100 vis., 3 color, 20-25 cold test	.05½	.06	.05½	.06	.05½	.06
150 vis., 3 color, 20-25 cold test	.07¼	.07½	.07¼	.07½	.07¼	.07½
150 vis., 4 color, 20-25 cold test	.07		.07		.07	
180 vis., 3 color, 23-28 cold test	.08½	.09	.08½	.09	.08½	.09
180 vis., 4 color, 23-28 cold test	.08¼	.08½	.08¼	.08½	.08¼	.08½
180 vis., 5 color, 23-28 cold test	.08		.08		.08	
200 vis., 3 color, 23-28 cold test	.10	.10¼	.10	.10½	.10	.10½
200 vis., 4 color, 23-28 cold test	.09½	.10	.09½	.10	.09½	.10
200 vis., 5 color, 23-28 cold test	.09¼	.09½	.09¼	.09½	.09¼	.09½
240 vis., 3 color, 25-30 cold test	.13½	.14	.13½	.14	.13½	.14
240 vis., 4 color, 25-30 cold test	.12½	.13	.12½	.13	.12½	.13
240 vis., 5 color, 25-30 cold test	.11½	.12	.11½	.12	.11½	.12
280 vis., 3 color, 25-30 cold test	.15½	.16	.15½	.16	.15½	.16
280 vis., 4 color, 25-30 cold test	.14½	.15	.14½	.15	.14½	.15
280 vis., 5 color, 25-30 cold test	.13½	.14	.13½	.14	.13½	.14
Cylinder Stocks:						
600, steam refined, light green	.08	.12	.08	.12	.08	.12
600, steam refined, dark green	.06	.08	.06	.08	.06	.08
190-200 vis., D color, Bright Stock	.30		.30		.30	
150-160 vis., D color, Bright Stock	.25		.25		.25	
*150-160 vis., D color, Bright Stock	.22	.24	.22	.24	.22	.24
150-160 vis., E color, Bright Stock	.23		.23		.23	
Waxes:						
124-126 White Crude Scale Wax	.02	.02⅛	.02	.02⅛	.01¾	.02

*High cold test. All bright stock prices are for domestic movement.

PENNSYLVANIA—						
34 Neutral	.05¾	.07	.05¾	.07	.05¾	.07
34 Sundebloom	.05½		.05½		.05½	
36 Miners' Neutral	.05¾		.05¾		.05¾	
150, 3 color	.11½	.13½	.11½	.13½	.11½	.13½
180, 3 color	.16	.17	.16	.17	.16	.17
200, 3 color	.18	.19½	.18	.19½	.18	.19½
220, 3 color	.23		.23		.23	
600, steam refined	.11½	.12	.11½	.12	.11½	.12
635, steam refined	.15	.17	.15	.17	.15	.17
650, steam refined	.15½	.17	.15½	.17	.15½	.17
600, Pennsylvania Flash	.18	.19½	.18	.19½	.18	.19½
630, Pennsylvania Flash	.26	.28	.26	.28	.26	.28
600, E filtered	.15½	.17	.15½	.17	.15½	.17
600, D filtered	.19	.21	.19	.21	.19	.21
Pennsylvania Bright Stocks	.25		.25		.25	
*122-124 White Crude Scale Wax	.02¼		.02¼		.02¼	
124-126 White Crude Scale Wax	.02¼		.02¼		.02¼	

*At New York.

GULF COAST (South Texas)—						
100 vis., 2-2½ color, pale oil	.06½	.06¾	.06½	.06¾	.06½	.06¾
200 vis., 3 color, pale oil	.09½		.09½		.09½	
300 vis., 3 color, pale oil	.10¾		.10¾		.10¾	
500 vis., 3½ color, pale oil	.12	.12¾	.12	.12¾	.12	.12¾
750 vis., 3½ color, pale oil	.13½		.13½		.13½	
1,200 vis., 3½ color, pale oil	.16		.16		.16	



REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

2,000 vis., 6 plus color, red oil	.17		.17		.17			
200 vis., 5-6 color, red oil	.08¾	.09	.08¾	.09	.08¾	.09		
300 vis., 5-6 color, red oil	.10	.10¼	.10	.10¼	.10	.10¼		
500 vis., 5-6 color, red oil	.11¼		.11¼		.11¼			
750 vis., 5-6 color, red oil	.12¾	.13	.12¾	.13	.12¾	.13		
1,200 vis., 5-6 color, red oil	.15		.15		.15			
2,000 vis., 4 color, pale oil	.17		.17		.17			
200 vis., 2½ color, filtered oil	.11	.12	.11	.12	.11	.12		
300 vis., 2½ color, filtered oil	.12	.13	.12	.13	.12	.13		
CALIFORNIA—								
130 vis., 2½-3 color	.09	.09¼	.09	.09¼	.09	.09¼		
200 vis., 2½-3 color	.10	.10½	.10	.10½	.10	.10½		
300 vis., 3-3½ color	.10½	.10¾	.10½	.10¾	.10½	.10¾		
350 vis., 3½-4 color	.11	.11¼	.11	.11¼	.11	.11¼		
400 vis., 3½-4 color	.12	.12½	.12	.12½	.12	.12½		
Red Neutral:								
200 vis., 4½-5 color	.10	.10¼	.10	.10¼	.10	.10¼		
300 vis., 5-6 color	.10½	.10¾	.10½	.10¾	.10½	.10¾		
400 vis., 5-6 color	.12	.12¼	.12	.12¼	.12	.12¼		
500 vis., 4½-5 color	.13	.13¼	.13	.13¼	.13	.13¼		
500 vis., 5-6½ color	.13	.13¼	.13	.13¼	.13	.13¼		
600 vis., 6½ plus color	.13	.13¾	.13	.13¾	.13	.13¾		

Note—Bright stocks are not manufactured commercially on the Pacific Coast.

NEW YORK (BAYONNE) REFINERY PRICES

	Sept. 16		Sept. 9		Sept. 2	
Gasoline, U. S. Motor, 58-60, 437 e.p.	.08	.10	.08	.10	.08	.10
Kerosene, water white, 41-43	.06¾		.06¾		.06¾	
*Fuel Oil, Bunker "C," 41-43	1.15		1.15		1.15	
Fuel Oil, Diesel, 28-30, per bbl.	2.00		2.00		2.00	
Gas Oil, 32-36 gravity	.04¾	.05¼	.04¾	.05¼	.04¾	.05¼
25 pale Paraffin Oil, tank car	.10¼		.10¼		.10¼	
28 pale Paraffin Oil, tank car	.07¼		.07¼		.07¼	
280 red Paraffin Oil, tank car	.12½		.12½		.12½	
250 red Paraffin Oil, tank car	.11½		.11½		.11½	
225 red Paraffin Oil, tank car	.10		.10		.10	
200 red Paraffin Oil, tank car	.09¼		.09¼		.09¼	
Refined Wax:						
120-122 a.m.p., per lb.	.03		.03		.03	
125-127 a.m.p., per lb.	.03⅜		.03⅜		.03⅜	
130-132 a.m.p., per lb.	.03¾		.03¾		.03¾	
133-135 a.m.p., per lb.	.04½		.04½		.04½	
135-137 a.m.p., per lb.	.04¾		.04¾		.04¾	
Petrolatum in barrels, in carload lots, per pound:						
Dark Green	.01¾		.01¾		.01¾	
Amber	.03¼		.03¼		.03¼	
Extra Amber	.03⅜		.03⅜		.03⅜	
Cream	.06		.06		.06	
Lily White	.06⅝		.06⅝		.06⅝	
Snow White	.08		.08		.08	

*Lighterage 5.0 cents a barrel extra.

NEW YORK (BAYONNE) EXPORT PRICES

	Sept. 16		Sept. 9		Sept. 2	
600, steam refined cylinder stocks, in bbls.	.17		.17		.17	
635, steam refined	.19		.19		.19	
650, steam refined	.23		.23		.23	
600, Pennsylvania Flash	.28		.28		.28	
630, Pennsylvania Flash	.31		.31		.31	
600, Warren E	.24		.24		.24	
600, Oil City E	.23		.23		.23	
Light 140-150 Bright Stocks	.32	.33	.32	.33	.32	.33
Dark 140-150 Bright Stocks	.30	.31	.30	.31	.30	.31

LOS ANGELES EXPORT PRICES

	Sept. 16		Sept. 9		Sept. 2	
Kerosene, water white	.04	.05	.03¾	.04½	.03¾	.04½
*U. S. Motor Gasoline, 53-55, 437 e.p.	.06¾	.07¼	.06½	.07	.06½	.06¾
*60-62, 400 endpoint gasoline	.08½	.09½	.08½	.09	.08½	.09

*Prices on coastwise shipments.

CRUDE OIL PRICES

OKLAHOMA, KANSAS, NORTH AND EAST CENTRAL TEXAS

Oklahoma City—Same as other Mid-Continent price schedule except Empire Pipe Line Co. posted all oil 40 gravity and above at $1.43 on April 10.
Corsicana heavy (April 10, 1930).....$ .80
Other fields.....See gravity table

TEXAS PANHANDLE

Gray County, Wheeler County and Carson-Hutchison Counties—See gravity table.
In Noel-McConnell district, Prairie Oil & Gas Co. posted April 10, below 30 degrees, 75¼ cents, with 5-cent differential upward to 34-34.9, $1.00½, and then a 3-cent differential upward to 44 and above at $1.35½.

WEST TEXAS

Iatan*.....Same as North Texas
Crane-Upton-Crockett, Pecos, Winkler, Mitchell and Ector.....
.....See gravity table, Column 3
Howard and Glasscock.....
.....See gravity table, Column 9
Chalk† (April 10, 1930).....$ .75

*Includes Westbrook Field. †Posted by Humble Oil & Refining Co.

ARKANSAS-NORTH LOUISIANA

Smackover, below 24 gravity (April 11, 1930).....$ .90
Smackover, 24 gravity and above (April 11, 1930).....1.05
Carterville, Sarepta and Cotton Valley, below 36 gravity (April 11, 1930).....85
Bellevue (April 11, 1930).....1.15
Urania (April 11, 1930).....95
East El Dorado (April 11, 1930).....90
Other fields.....See gravity table

Cotton Valley crude above 36 gravity takes same gravity price schedule as shown for North Louisiana and Arkansas crude in Mid-Continent gravity price table.

Note—Smackover, Cotton Valley and Bellevue posted by Standard Oil Co. Louisiana and Magnolia Petroleum Co.; Urania posted by Louisiana Oil Refining Corp.; East El Dorado posted by Magnolia Petroleum Co.

Grade A (April 10, 1930)*.....$1.15
Grade B, 25 degrees and upward.....
.....See gravity table
Jennings, La. (April 10, 1930)†.....1.10
Refugio (light).....Same as Grade B
Refugio (heavy) (April 10, 1930)‖.....85
Sorrento (April 10, 1930)‡.....1.10
Markham (April 10, 1930)§.....85
High Island (April 10, 1930)¶.....95

*Humble Oil & Refining Co. †Gulf Pipe Line Co. ‡Sun Pipe Line Co. §Texas Pipe Line Co. ¶Posted by Gulf Pipe Line Co. ‖Humble Oil & Refining Co. and Gulf Coast Pipe Line Co.

ROCKY MOUNTAIN STATES
Ohio Oil Co.-Midwest Refining Co.
(Effective April 11, 1930)

Iles (Feb. 15, 1930).....$ .87
33 gravity and above.....87
Under 33 gravity.....65
Dutton Creek (Feb. 15, 1930).....1.25
Rock Creek, Wyo.....1.35

(Continued on Page 144)

CRUDE OIL GRAVITY TABLE

Gravity—	Okla.-Kans. 1	N. C. Texas No. La., Ark. 2	Crane, Upton, Ector, Crockett, Winkler, Pecos, Mitchell (West Texas) Lea, N. Mex. 3	Wheeler County (Texas Panhandle) 4	Gray County (Texas Panhandle) 5	Carson and Hutchinson (Texas Panhandle) 6	Salt Creek, Wyo. 7	Stephens, Ark. 8	Howard-Glasscock (West Texas) 9	Grade B Gulf Coast and Refugio Texas 10
Below 25	.75	.72	.65	....	....	....	....	....	.65	1.00
25 to 25.9	.80	.77	.68	....	....	....	....	....	.68	1.03
26 to 26.9	.85	.82	.71	....	....	....	....	....	.71	1.06
27 to 27.9	.90	.87	.74	....	....	....	....	.76	.74	1.09
28 to 28.9	.95	.92	.77	....	.75½	....	....	.81	.76	1.12
29 to 29.9	1.00	.97	.80	.75½	.80½	....	1.00	.86	.78	1.15
30 to 30.9	1.05	1.02	.83	.80½	.85½	....	1.05	.91	.80	1.18
31 to 31.9	1.10	1.07	.86	.85½	.90½	.77½	1.10	.96	.82	1.21
32 to 32.9	1.15	1.12	.89	.90½	.95½	.82½	1.15	1.01	.84	1.24
33 to 33.9	1.18½	1.17	.92	.95½	1.00½	.87½	1.18½	....	.86	1.27
34 to 34.9	1.22	1.22	.95	1.00½	1.05½	.92½	1.22	....	.88	1.30
35 to 35.9	1.25½	1.25½	.98	1.04	1.09	.96	1.25½	....	.90	1.33
36 to 36.9	1.29	1.29	1.01	1.07½	1.12½	.99½	1.29	....	.92	1.36
37 to 37.9	1.32½	1.32½	....	1.11	1.16	1.03	1.32½	....	....	1.39
38 to 38.9	1.36	1.36	....	1.14½	1.19½	1.06½	....	....	....	1.42
39 to 39.9	1.39½	1.39½	....	1.18	1.23	1.10	....	....	....	1.44
40 to 40.9	1.43	1.43	....	1.21½	1.26½	1.13½	....	....	....	1.46
41 to 41.9	1.46½	1.46½	....	1.25	1.30	1.17	....	....	....	1.48
42 to 42.9	1.50	1.50	....	1.28½	1.33½	1.20½	....	....	....	1.50
43 to 43.9	1.53½	1.53½	....	1.32	1.37	1.24	....	....	....	1.52
44 and above	1.57	1.57	....	1.35½	1.40½	1.27½	....	....	....	1.54

Column 1, Note—Above prices posted April 10, 1930, by Carter Oil Co. (beginning at 25° and below), and by the Prairie Oil & Gas Co. and other purchasers beginning at 24° and below, the Magnolia Petroleum alone excepted. The Magnolia on April 10 posted the following prices: Below 26 gravity, 70 cents; 26-26.9, 76 cents; 27-27.9, 82 cents; 28-28.9, 88 cents; 29-29.9, 95 cents; 30-30.9, $1.02. From 31 and up and including 44° and above Magnolia followed Carter price schedule, but made its whole schedule apply to its gravity purchases in Kansas, Oklahoma and North Central Texas alike.

Column 2—Humble Oil & Refining Co. posted above prices April 10, 1930, and was followed by all other companies in Texas except Magnolia which posted a different price schedule than Humble up to 33.9°. (See note in paragraph just above.) The Texas Company posted North Louisiana and Arkansas on April 10, and Standard of Louisiana posted on April 11, followed by other companies, but Magnolia's price schedule begins with below 28 gravity at 87 cents. North Central Texas includes North Texas, Ranger, Mexia, Powell, Richland, Wortham, Lytton Springs, Currie, Nocona, Moran and Corsicana light, Arkansas and Louisiana pools include Caddo, Bull Bayou, Crichton, Cotton Valley (above 36 gravity), DeSoto, Haynesville, Homer, El Dorado and Rainbow.

Column 3—Posted by Humble Oil & Refining Co. April 10, 1930, and Magnolia Petroleum Co., April 10, 1930.

Columns 4, 5 and 6—Humble Oil & Refining Co., Prairie Oil & Gas Co., Magnolia Petroleum Co., April 10, 1930.

Column 7—Midwest Refining Co., April 11. All crude over 37 gravity $1.32½.

Column 8—Louisiana Oil & Refining Co., April 11.

Column 10—Humble Oil & Refining Co., April 10. Magnolia Petroleum Co. posted below 25 gravity, 65 cents, with 3-cent differential upward to and including 36 and above, which was posted at $1.01.

CALIFORNIA CRUDE OIL PRICES

Standard Oil Co. (effective September 16, 1930). Union Oil Co. (effective June 14, 1930).

Gravity	Long Beach, Seal Beach, Alamitos Hts., Huntington Beach, Inglewood, Torrance, Richfield, Olinda-Brea Canyon 1	Whittier, La Habra, Coyote Hills 2	Midway-Sunset, Elk Hills, Lost Hills, Belridge, 3	Montebello 4	Santa Fe Springs 5	Santa Maria Coalinga 6	Wheeler Ridge, Fruitvale 7	Orcutt, Ventura, Rincon 8	Ventura Avenue 9	Elwood Terrace 10	Athena, Rosecrans, Dominguez 11
14 to 14.9	.70	.70	.55	.70	....	.55	.55	.55	.70	....	....
15 to 15.9	.70	.70	.55	.70	....	.55	.55	.55	.70	....	....
16 to 16.9	.70	.70	.55	.70	....	.55	.55	.55	.70	....	....
17 to 17.9	.70	.70	.55	.70	....	.55	.55	.55	.70	....	....
18 to 18.9	.76	.76	.62	.71	....	.62	.62	.65	.70	....	....
19 to 19.9	.82	.82	.70	.77	....	.70	.70	.70	.82	....	....
20 to 20.9	.88	.87	.78	.83	....	.78	.78	.78	.88	....	....
21 to 21.9	.94	.93	.86	.90	.92	.86	.86	.90	.91	....	....
22 to 22.9	1.00	.98	.94	.97	.95	.94	.94	.95	.94	....	....
23 to 23.9	1.07	1.04	1.02	1.05	1.01	1.02	1.02	1.02	1.00	....	....
24 to 24.9	1.12	1.08	1.06	1.08	1.05	1.04	1.04	1.10	1.07	....	1.12
25 to 25.9	1.17	1.12	1.10	1.11	1.09	1.06	1.06	1.18	1.14	....	1.17
26 to 26.9	1.22	1.16	1.14	1.15	1.13	1.08	1.08	1.26	1.21	....	1.22
27 to 27.9	1.26	1.21	1.18	1.19	1.18	1.11	1.10	....	1.28	....	1.27
28 to 28.9	1.30	1.25	1.23	1.23	1.23	1.15	....	....	1.35	....	1.32
29 to 29.9	1.34	1.29	1.29	1.26	1.28	1.19	....	....	1.39	....	1.37
30 to 30.9	1.38	1.33	1.35	1.29	1.33	1.23	....	....	1.43	....	1.42
31 to 31.9	1.43	....	1.40	....	1.38	1.27	....	....	1.48	....	1.47
32 to 32.9	1.48	....	1.47	....	1.43	1.31	....	....	1.53	....	1.52
33 to 33.9	....	....	1.53	....	1.48	1.35	....	....	1.59	....	1.57
34 to 34.9	....	....	1.59	....	1.53	1.39	....	....	1.65	1.32	1.62
35 to 35.9	....	....	1.65	....	1.58	1.43	....	....	1.78	1.39	1.66
36 to 36.9	....	....	....	....	1.63	....	....	....	....	1.46	1.72
37 to 37.9	....	....	....	....	1.68	....	....	....	....	1.53	1.78
38 to 38.9	....	....	....	....	1.73	....	....	....	....	1.60	1.84
39 to 39.9	....	....	....	....	1.78	....	....	....	....	1.66	1.90
40 to 40.9	....	....	....	....	....	....	....	....	....	1.72	2.02
41 to 41.9	....	....	....	....	....	....	....	....	....	1.78	2.08
42 to 42.9	....	....	....	....	....	....	....	....	....	1.84	....

Kern River, Newhall-McKittrick, Mount Poso and Round Mountain, 11 to 13.9 gravity, 50 cents; 14 gravity and above 55 cents, effective March 11. On March 11, the Union Oil Co. posted Midway-Sunset, Elk Hills, Buena Vista, Lost Hills and Coalinga crude as follows: 11 to 13.9 gravity at 50 cents, Kettleman Hills, 55 gravity and above, $1.65 per barrel (effective June 14, 1930).
lows: 11 to 13.9 gravity at 50 cents.

Column 1—Signal Hill, Seal Beach, Huntington Beach and Alamitos Heights crude, 14 to 32.9 gravity, inclusive; Richfield, Olinda-Brea and Fullerton, 14 to 30.9 gravity; Torrance and Inglewood, 14 to 28.9 gravity.

Column 2—Whittier crude, 14 to 22.9 gravity; Coyote Hills, 14 to 30.9 gravity.

Column 3—Kern River, Newhall and McKittrick, 11 to 19.9 gravity; Midway-Sunset, Buena Vista and Elk Hills, 11 to 33.9 gravity; Lost Hills, 11 to 34.9 gravity; oil below 14 gravity posted at 50 cents.

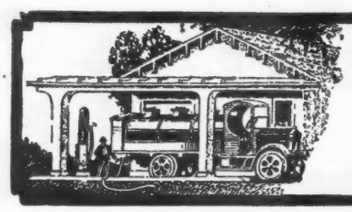
Column 5—Price change posted by Standard of California, June 14.

Column 6—Oil below 14 gravity posted at 45 cents.

Columns 8 and 9—Posted by Union Oil Co. only.

Column 10—Standard posted price f.o.b. tanker.

Kettleman Hills, 55 gravity and above, $1.65 (posted by Standard Oil Co. of California).



TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns Sept. 16

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO. (INDIANA)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
Chicago†	18.0	19.0	3.0	13.0
Decatur, Ill.	18.2	19 2	3.0	13.1
E. St. Louis	17.4	18.4	3.0	12.2
Joliet	18.4	19.4	3.0	13.3
Peoria	18.2	18.2	3.0	13.1
Quincy	18.2	19.2	3.0	12 9
Davenport, Ia.	18.5	19.5	3.0	13.3
Des Moines	15.5	16.5	3.0	13.2
Keokuk	18.5	19.5	3.0	13.3
Sioux City	18 1	19.1	3.0	12.9
Duluth, Minn.	19.5	20.5	3.0	13.9
Mankato	19.1	15.0	3.0	13.7
Minneapolis	16.0	18.0	3.0	13.9
LaCrosse, Wis.	18.2	19.2	2 0	14.0
Milwaukee	17.1	16.0	2 0	12.9
Madison	17.3	18.3	2.0	13.1
Detroit, Mich.	16 8	16.8	3 0	14 7
Grand Rapids	18.7	16.7	3.0	14.6
Saginaw	18.9	19.9	3.0	14.8
Evansville, Ind.	19.0	15.0	4.0	14.0
Fort Wayne	19.4	18.0	4 0	14.4
Indianapolis	17.9	17.2	4.0	14 2
South Bend	19.4	20.4	4.0	14.4
Fargo, N. D.	20.9	21.9	3.0	15.9
Huron, S. D.	20.2	17.5	4.0	14.7
Sioux Falls	19 1	20.1	4.0	14.4
K. C., Mo.*	17.9	18.9	3.0	11.6
Springfield*	17.8	18.8	3.0	12.5
St. Louis*	16.9	17.9	2.5	12.3
St. Joseph	17.5	18.5	2 0	12.2
Wichita, Kans.	16.8	14.8	3.0	11.8
Bartlesville, Ok.	17.5	20.5	4.0	11.5

*State tax 2 cents; remainder city tax.

†Effective June 3, discounts on Q.D.A. in Chicago district 4 cents off service station price on purchases of 500 gallons or more per month and 5 cents on purchases of 1,000 gallons or more per month.

Effective August 5, the following quantity discounts from the service station prices are allowed on monthly sales of gasoline; 500 gallons or more, 3 cents; 75,000 gallons or more, 4½ cents. Discounts are allowed each month and they are not cumulative. Delivery tickets showing date and quantity delivered must be sent to the seller before the tenth of the month to secure the discount on the previous month's purchases.

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
Denver, Colo.	16.0	19.0	4.0	15.5
Pueblo	17.0	20.0	4.0	15.5
Grand Junction	21.5	24.5	4.0	19.0
Casper, Wyo.	19.0	22.0	4.0	14.0
Cheyenne	20.5	23.5	4.0	15.5
Butte, Mont.	24.5	22.0	5.0	20.0
Billings	24.5	27.5	5.0	18.5
Great Falls	24.5	27.5	5.0	20.0
Helena	24.5	27.5	5.0	20 0
Salt Lake, Utah	20.0	23.0	3.5	17.0
Albu'que, N. M.	14.0	18.0	5.0	15.0
Boise, Idaho	23.5	26.5	5.0	19.0
Twin Falls	23 5	27.5	5.0	19.0

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
N. Orleans, La.*	13.5	13.5	5.0	12.0
Baton Rouge	15.5	16.0	4.0	14.0
Alexandria†	17.5	18.0	5.0	13.0
Lafayette*	17.5	18.0	5 0	13.0
Lake Charles*	17.5	18.0	5.0	13.0
Shreveport	15.5	17.5	4.0	13.0
Knoxv'le, Tenn.	19.5	20.0	5.0	15.0
Memphis	15.0	17.0	5.0	12.5
Chattanooga	19.5	20.0	5.0	13.0
Nashville	17.0	17.0	5.0	15.0
Bristol	19.5	21.5	5.0	14.0
Lt. Rock, Ark.	15.0	15.0	5.0	13.0

*Includes city tax of 1 cent. Louisiana kerosene prices include 1-cent state tax. New Orleans kerosene price also includes 1-cent city tax.

†Gasoline price at Alexandria includes 1-cent tax in parish of Rapides.

SOUTHWESTERN DISTRICT

Magnolia Petroleum Co.

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
Dallas, Tex.	14.0	17.0	4 0	12 0
Fort Worth	14.0	17.0	4.0	11.0
Houston	15.0	19.0	4.0	11.0
San Antonio	13 0	17.0	4.0	11.0
El Paso	16.0	20.0	4.0	13.0
Texarkana	17.0	17.0	4.0	12.0
Muskogee*	16.0	19.0	4.0	9.0
Okla. City*	15.0	18.0	4.0	10.0
Tulsa	16 0	20.0	4.0	10.0
Ft. Smith, Ark.	12 0	12 0	5 0	12 0
Little Rock	17.0	15.0	5.0	13.0

*Gasoline tank wagon price to dealers 1 cent under posted tank wagon.

PENNSYLVANIA—DELAWARE AND PART NEW ENGLAND

The Atlantic Refining Co.

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
Pittsburgh, Pa.	16.0	*21.0	...	13.0
Philadelphia	16.0	*21.0	...	13 0
Scranton	16.0	*21.0	...	13.0
Allentown	16.0	*21.0	...	13.0
Altoona	16.0	*21.0	...	13.0
Erie	15 0	*19.0	...	13.0
Dover, Del.	19.0	21.0	3.0	13.0
Wilmington	19.0	21.0	3.0	13.0
Springf'd, Mass.	17.5	19.5	2.0	12.5
Worcester	17.3	19.3	2 0	12.3
Boston	16.5	18.5	2.0	11.5
Providence, R.I.	16.7	18.7	2.0	11.7
Hartford, Conn.	17.5	19 5	2.0	12.5
New Haven	17.6	19.6	2.0	12.6

*Includes tax of 3 cents. Pennsylvania tax is collected by the dealer and paid by him direct to the State. The Atlantic Refining Co. recognizes a 2-cent per gallon discount on gasoline from its posted tank wagon markets on sales to dealers for purposes of resale. The Atlantic Refining Co. also recognizes a maximum discount of 2 cents per gallon on gasoline to commercial accounts under contract for one year.

PACIFIC COAST TERRITORY

Standard Oil Co. (California)

	Gasoline Wholesale price	Gasoline Retail price	Gasoline Incl'ds tax of	Kero. tank wagon
Fresno	19.0	17.0	3.0	17.0
San Francisco	19.0	12.0	3.0	15.5
Los Angeles	18.5	16.5	3 0	15.5
Reno, Nev.	24.0	22.0	4.0	19.0
Portland, Ore.	20.5	18.5	4.0	16.5
Seattle, Wash.	19.5	12.5	3.0	16.5
Tacoma	19 5	17.5	3.0	16.5
Spokane	21.5	21.5	3.0	20.5
Phoenix, Ariz.	17.0	20.0	4.0	20.0

Above prices are at company's plant or depots as company does not operate stations. A 6-cent per gallon discount is given dealers and customers taking tank wagon lots except in Phoenix where the discount is 1 cent.

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
Omaha	19.25	19.25	4.0	13.25
McCook	20.75	22.75	4.0	14 75
Norfolk	19.75	21.75	4.0	13.75
N. Platte	20.75	22.75	4.0	14.50
Scottsbluff	17.00	17.00	4 0	14.25

OHIO

Standard Oil Co. (Ohio)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
Ohio points*	20.0	21.0	4.0	†14.0

*Dealers and commercial accounts 2 cents under tank wagon.

†Service station price 16 cents.

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
Albany, N. Y.	15.6	17.6	2.0	15.6
New York*	16.3	18.3	2.0	14 3
Buffalo	17.8	19.8	2.0	14.8
Rochester	18.0	20.0	2.0	14.0
Syracuse	18.8	20.8	2.0	14.8
Boston, Mass.	16.5	18.5	2.0	13.5
Augusta, Me.	19.8	21.8	4.0	14.8
Manch't'r, N.H.	19.4	21.4	4.0	14.0
Burlington, Vt.	19.6	21.6	4.0	15.3

*Prices in steel barrels.

STANOLIND FURNACE OIL IN CHICAGO

Less than 100 gallons	9.0
100 to 349 gallons	8.0
350 gallons or more	7.5

Note—Outside Chicago furnace oil discount of 1 cent per gallon is given on deliveries of 100 to 349 gallons and 1½ cents on deliveries of 350 gallons or more.

NAPHTHA

	Tank wagon	Tank car
Oleum spirits	14.7	10 0
V. M. & P. naphtha	16.7	12.0
Cleaner's naphtha	17.0	14.9
Stanisol	17.0	15.4

Tank wagon prices f.o.b. Chicago; tank car prices f.o.b. Whiting.

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
Atlantic City	16.5	18.5	2.0	13.5
Newark, N. J.	15.5	17.5	2.0	12 5
Annapolis	18.0	20.0	4.0	13.0
Baltimore	17.2	19.2	4.0	10.5
Cumberland	19.0	21.0	4.0	14.0
Wash'gton, D.C.	15.7	17.7	2.0	12.7
Danville, Va.	19.8	21.8	5.0	13.8
Norfolk	18.3	20.3	5.0	11.0
Petersburg	19.3	20.0	5.0	13.3
Roanoke	19.0	20.0	5.0	14 0
Richmond	18.7	20.7	5.0	12.7
Charles'n, W.Va.	18.5	20.5	4.0	12.5
Keyser	19.1	21.1	4.0	14.1
Parkersburg	17.2	19.2	4.0	11.2
Wheeling	18.4	20.4	4.0	12.4
Charlotte, N. C.	20.3	22.3	5.0	14.3
Hickory	20.6	22.6	5.0	14.6
Mt. Airy	20.5	22.5	5.0	14 5
Salisbury	20.5	22.5	5.0	14.5
Charleston, S.C.	19.3	21.3	6.0	12.3
Columbia	21.2	23.2	6.0	14 2

A 2-cent per gallon discount off the gasoline tank wagon price is offered to dealers.

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
Atlanta, Ga.	19.0	21.0	6.0	14.5
Augusta	22 0	24.0	6.0	15.5
Macon	20.0	22.0	6.0	13 0
Savannah	18.0	20.0	6.0	14.0
Birm'ham, Ala.	16.0	18.0	5.0	14.5
Mobile	18.0	18.0	4 0	13.5
Montgomery	19.0	21.0	4.0	15.0
Clarks'le, Miss.	19.0	21.0	5.0	12.5
Jackson	17.0	19.0	5.0	13.0
Natchez	19.0	21 0	5.0	13.0
Gulfport	20.5	22.5	5.0	13.0
Vicksburg	19.0	21.0	5.0	13.0
Jack'ville, Fla.	19.0	21.0	6.0	14.0
Miami	21.0	23.0	6 0	14.0
Pensacola	19.0	19.0	6.0	13.5
Tampa	20.0	20.0	5.0	13.0
Lexington, Ky.	19.0	20.0	5.0	14 5
Covington	20.0	22.0	5.0	14.5
Louisville	18.0	20.0	5.0	13.5
Ashland	18.0	20.0	5.0	15.0
Catlettsburg	18 0	20.0	5.0	15.0

In addition to the state tax of 4 cents on gasoline, Montgomery has city tax of 1 cent on gasoline and one-half on kerosene. Kerosene prices in Georgia include 1-cent tax. In Florida, an inspection fee of 0.125 cent; in Alabama, an inspection fee of one-half cent on kerosene and one-fourth cent on gasoline. To Pensacola, Birmingham and Mobile state taxes add 1-cent levy tax. To Gulfport state tax add privilege tax of 2 cents.

Effective April 2, price to dealers 2 cents under posted tank wagon price.

TANK WAGON CHANGES

Standard Oil Co. of Louisiana reduced the gasoline tank wagon and station prices 2 cents at Little Rock, Ark., to 15 cents each.

Magnolia Petroleum Co. reduced the gasoline station price to 15 cents at Fort Smith, Ark., September 4 and to 17 cents at Little Rock, Ark., September 2.

Standard Oil Co. of New Jersey reduced the gasoline station price 1.3 cent at Petersburg, Va., to 20 cents September 8.

Standard Oil Co. of Indiana reduced the gasoline station price to 16 cents in Evansville, Ind., September 8 and then on September 11 reduced it to 15 cents. On the latter date the station prices were also reduced in Grand Rapids, Mich., to 16.7 cents and in Fort Wayne, Ind., to 18 cents. On the same day the gasoline tank wagon and station prices were reduced to 16 cents and 18 cents, respectively, in Minneapolis, Minn.

Magnolia Petroleum Co. reduced the gasoline station price 1 cent in Dallas, Tex., to 16 cents September 11. On September 15 the tank wagon price was reduced 2 cents in Fort Smith, Ark., to 12 cents.

Standard Oil Co. of Indiana reduced the gasoline tank wagon and station prices to 16.8 cents at Detroit, Mich., September 13. On the same date the station price was reduced to 16 cents in Milwaukee, Wis., to 16 cents.

CRUDE OIL PRICE CHANGES

The Joseph Seep Purchasing Agency increased the price of Pennsylvania Grade crude oil in Buckeye pipe lines 15 cents per barrel, or from $1.75 to

(Continued on Page 148)

CRUDE OIL PRICES

(Continued from Page 143)

Salt Creek	See gravity table
Mig Muddy	1.38
Grass Creek, heavy (July 27, 1928)	.90
Grass Creek, light	1.55
Mule Creek (May 21, 1929)	1.20
Elk Basin	1.55
Lance Creek	1.63
Poison Spider (March 14, 1927)	1.00
Notches (March 14, 1927)	.65
Rex Lake (February 22)	1.10
Osage	1.63
Lost Soldier (contract, May 23)	1.00
Hamilton Dome (March 14, 1927)	.85
Breybull (April 11, 1930)	1.55
Four Bear (May 31, 1929)	.85
Cat Creek	1.55
Pondera (Montana) (April 10, 1930)	1.55
Sunburst (Montana) (Feb. 15, 1930)	1.45
Hogback (Feb. 15, 1930)	1.40
Artesia (New Mexico)	1.00
Lea County	See gravity table

Note—Salt Creek, Osage, Cat Creek, Greybull and Hogback posted by Midwest Refining Co., and the remainder by the Ohio Oil Co. Both companies posted Grass Creek light and Elk Basin.

SOUTH CENTRAL AND SOUTHWEST TEXAS

Darst Creek (April 10, 1930)*	$1.15
Luling (April 10, 1930)	.85
Mirando (April 10, 1930)†	.85
Pettus (Aug. 21, 1930)‖	1.15
Salt Flat (April 10, 1930)‖	1.15
Thrall‡	...
Lytton Springs (Lockhart)	See gravity table
Somerset (April 10, 1930):	
Below 33 gravity	$1.15
33 to 33.9 gravity	1.17
34 to 34.9 gravity	1.19
35 to 35.9 gravity	1.21
36 to 36.9 gravity	1.23
37 to 37.9 gravity	1.25
38 gravity and above	1.27

*Posted by Humble Oil & Refining Co. and Magnolia Petroleum Co. †Magnolia Petroleum Co., Humble Oil & Refining Co., Crown Central Pipe Line Co. ‡Thrall prices same as North Central Texas less 19½ cents per cwt. freight. ‖Humble Oil & Refining Co.

EASTERN STATES

Joseph Seep Purchasing Agency

(Effective August 22, 1930)

Seep Purchasing Agency withdrew from Bradford and Allegany Fields as a purchaser on May 16.

Penna Grade Oil in National Transit Lines (Pennsylvania)	$2.20
Penna Grade Oil in Southwest Pennsylvania Lines (Pennsylvania)	2.25
Penna Grade Oil in Eureka Pipe Line Lines (West Virginia)	2.15
Penna Grade Oil in Buckeye Pipe Line Lines (Ohio) (Sept. 14, 1930)	1.90
Corning Grade Oil in Buckeye Pipe Line Co.'s Lines (Aug. 1, 1930)	1.50
Somerset Oil in Eureka Pipe Line Lines (Kentucky) (August 1, 1930)	1.14
Ragland Grade Oil in Cumberland Pipe Lines (Kentucky) (Aug. 1, 1930)	1.30
Wayne District Oil in Cumberland Pipe Lines (April 11, 1930)	1.34

Tide Water Pipe Co.

Bradford district (Aug. 22)	$2.50
Allegany district (Aug. 22)	2.50

Pure Oil Co.

Cabin Creek, W. Va. (Aug. 22)	$2.40
Kelly Creek, W. Va. (Aug. 22)	2.25
Bradford Hollow, W. Va. (Aug. 22)	2.25

MIDDLE WESTERN STATES

Ohio Oil Co.

(Effective April 11, 1930)

Lima (June 26, 1930)	$1.50
Wooster (June 26, 1930)	1.70
Illinois	1.65
Indiana (June 26, 1930)	1.32
Princeton	1.65
Plymouth	1.23
Western Kentucky	1.55
Midland, Mich.* (Aug. 21)	1.30
Dundee, Mich. (April 16)‖	
....Same as Mid-Continent gravity scale	
Upper and Lower Traverse Sands, Mich. (April 16)‖	
....Same as Mid-Continent gravity scale	
Saginaw, Mich. (April 11)†	
....Same as Mid-Continent gravity scale	
Cumberland, Clay, Barren, Clinton and Monroe Counties, Kentucky (March 15)‡	1.50
Oil City, Ky. (July 25, 1930)‖	1.35
Oil Springs (Canada) (June 28, 1930)¶	2.02
Petrolia (Canada) (June 23, 1930)¶	1.95

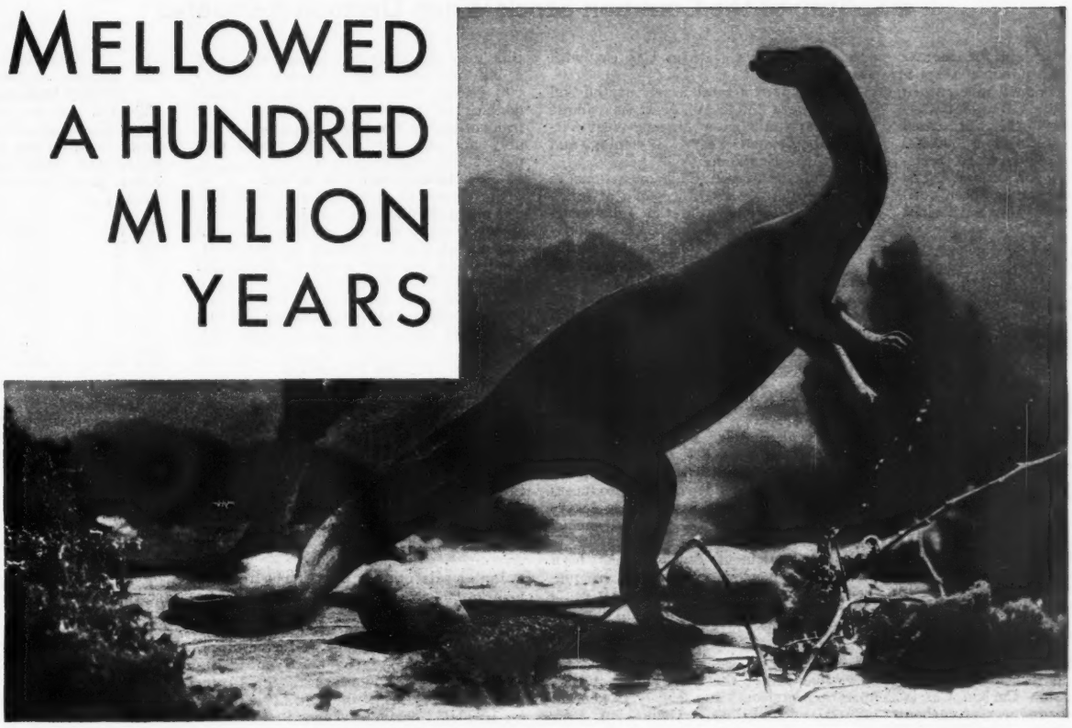
*Posted by Pure Oil Co. †Posted by Sun Oil Co. ‡Posted by Paragon Development Co. ‖Posted by Stoll Oil Refining Co. ¶Posted by Imperial Oil Co., Ltd. ¶Posted by Standard of Indiana for boat shipment. Local refiners posted Mid-Continent prices on April 11.

MEXICAN CRUDE

Panuco*	$0.65

*F.o.b. ship, based on August transactions.

MELLOWED A HUNDRED MILLION YEARS



Long, long ago in PENNSYLVANIA

The finest lubricating oil certainly deserves the strongest selling idea to put it across — and that's just the idea that Sinclair is putting behind Sinclair Pennsylvania Mobiline Motor Oil!

Read the most sensationally interesting advertisements ever developed for any motor oil —see the Saturday Evening Post (October 4), Collier's Weekly (October 4), Literary Digest (September 20), Liberty (September 18), and Fortune (October). Also the daily newspapers and rotogravure sections of Sunday newspapers throughout the country.

And Radio, Too — Tune in on the new Sinclair Radio Program beginning September 22. Hear the internationally famous comedians, Phil Baker, Shaw & Lee in the Sinclair laugh hit "GOING PLACES". Quarter hour broadcasts every Monday and Friday Evening.

Put in a supply of Mobiline—get ready to cash in on this stupendous campaign!

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SINCLAIR MOBILINE

Reg. U. S. Pat. Off. 1905

Pennsylvania MOTOR OIL

Made in the newest, largest single refinery using PENNSYLVANIA grade crude exclusively.

Guaranteed by SINCLAIR REFINING CO. INC. to be 100% pure PENNSYLVANIA GRADE OIL

35¢ *per quart*

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Columbian Carbon to Increase Stock

To Provide for Natural Gas Expansion and Make Possible a Splitup of the Common Stock When Deemed Advisable

With a view to providing for further expansion and to make possible a splitup of the company's common stock when this seems advisable, the Columbian Carbon Co. has increased the authorized amount of common stock from 500,000 to 2,000,000 shares, Reid L. Carr, secretary of the company, announced. The New York Stock Exchange has been notified of the increase in the authorized amount of stock.

Mr. Carr said the question of splitting the company's stock had been discussed at meetings of the directors of the company and it had been decided to defer these plans until the general business situation had improved and the time was deemed more propitious for putting the proposal into effect.

"The splitup will receive consideration, in all probability," Mr. Carr said, "when the financial skies have cleared. At present the company has outstanding 498,505 shares of common stock and an authorized issue of 500,000 shares. The increase in the amount of authorized stock will place the company in a position to expand or to split its stock whenever this is deemed advisable.

"While the company has several plans for expansion under consideration, these can be financed without issuing additional stock, as the company is in a strong cash position."

The company's expansion plans are largely in the natural gas field, it was learned. The Columbian Carbon Co. is said to be the largest producer of carbon black in the United States. It also sells natural gas at wholesale and retail, and its operations include gasoline production. It has contracts to supply the Interstate Natural Gas Co., the Mississippi River Fuel Co., the Southern Natural Gas Co., the Arkansas-Louisiana Pipe Line Co. and the Memphis Natural Gas Co. with natural gas.

The company's total assets at the end of 1929 were $39,082,986. It has plants in Pennsylvania, New Jersey, West Virginia, Louisiana, Texas, Wyoming and Greenwich, England.

Columbian Carbon Co.'s operations in the third quarter are proceeding at much the same rate shown in the June quarter when net income of $783,175, equivalent to $1.57 a share on 498,585 shares, was reported. In the first half-year net income of $1,593,180, or $3.19 a share, was 23 per cent below the $2,085,590 shown in the like 1929 period. This reflected chiefly lower operations of rubber tire manufacturers, who consume approximately 80 per cent of the carbon black production.

Price of carbon black has remained around 4½ cents a pound, compared with 5 to 7 cents a year ago. Huge inventories and continued excess production have caused stocks to be thrown on the market by small independent producers at distress prices. Current price leaves little profit even for the well-entrenched manufacturer. Columbian Carbon, in its high-priced pigment division, has been protected somewhat. Business in pigments, quoted as high as 55 to 60 cents a pound, has been held up well, thus affording a degree of stabilization to earnings.

In the natural gas division, company's operations so far this year have not been up to expectations, due largely to general industrial conditions. Columbian Carbon has gone ahead steadily expanding natural gas acreage, acquiring about 18,000 additional acres in the first half this year. Company's aggregate interest in gas field leases now approaches 500,000 acres. Due to construction of additional plant facilities, production this year of natural gasoline will show a big increase. Approximately 50,000,000 gallons will be produced, or nearly double last year's total. Carbon black production, on the other hand, will probably not come up to 1929 record output of 122,342,600 pounds.

Independent Oil & Gas

Statement of Independent Oil & Gas Co. and subsidiaries as of July 31, 1930, shows total assets of $45,567,288, compared with $46,205,824 on December 31, 1929, and earned surplus $9,110,342 against $9,279,250. Current assets totaled $8,303,630 and current liabilities $2,750,952, as contrasted with $10,100,240 and $2,939,287 respectively, on December 31, 1929.

Phillips Petroleum

Statement of Phillips Petroleum Co. and subsidiaries as of July 31, 1930, shows total assets of $167,732,607, compared with $145,384,954 on December 31, 1929, and earned surplus $36,777,028, against $34,059,513. Current assets totaled $39,942,090 and current liabilities $5,446,261 as contrasted with $25,557,510 and $6,348,615, respectively, on December 31, 1929.

Indian Refining

Indian Refining Co. reports for six months ended June 30, 1930, net income of $205,016 after taxes, interest, depreciation, etc., equivalent after dividend requirements on 7 per cent preferred stock, to 16 cents a share (par $10) on 1,270,122 shares of common stock. This compares with $319,442 or 22 cents a share on 1,250,032 common shares in first half of 1929.

Net income for quarter ended June 30, amounted to $315,512 after above charges, equal to 24 cents a share on 1,270,122 common shares comparing with net loss of $110,404 in preceding quarter and net income of $191,501 equal to 15 cents a share on 1,250,032 common shares in June quarter of previous year.

Twenty Representative Stocks

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange and New York Curb, based on closing quotations for Wednesday, was as follows:

Apr. 2	51.55	June 25	42.37
Apr. 9	53.26	July 2	44.13
Apr. 16	52.04	July 9	44.11
Apr. 23	53.39	July 16	46.42
Apr. 30	53.70	July 23	46.06
May 7	50.23	July 30	44.89
May 14	51.67	Aug. 6	45.24
May 21	49.71	Aug. 13	43.53
May 28	50.98	Aug. 20	43.79
June 4	50.94	Aug. 27	42.88
June 11	46.65	Sept. 3	42.71
June 18	41.41	Sept. 10	42.84

Producers & Refiners

Producers & Refiners Corp. and subsidiaries report for six months ended June 30, 1930, net loss of $820,511 after expenses, interest, depreciation, depletion and intangible development costs comparing with net loss of $483,720 in first half of 1929.

Mountain Producers

Mountain Producers Corp. declared regular quarterly dividend of 40 cents, payable October 1 to stock of record September 15.

Gulf Oil Corp.

Gulf Oil Corp. has declared the regular quarterly dividend of 37½ cents, payable October 1 to stock of record September 20.

Philadelphia Company

Referring to the change in par value of preferred 5 per cent stock of Philadelphia Co. from $50 to $10, and the issuance of five shares of $10 par value in exchange for each share of $50 par value, the committee on securities of the New York Stock Exchange rules that transactions

(Continued on Page 148)

INDEPENDENT OILS ON NEW YORK CURB

Quotations Compiled by Francis, Bro. & Co., Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.

1930 High	1930 Low	Week ended September 10 Sales	High	Low	Close	Stocks—		Outstanding capital	Par value	Div. rate	Last paid	1927 High	1927 Low	1928 High	1928 Low	1929 High	1929 Low
5/8	1/8	1,100	1/8	1/8	1/8	American Consolidated Oilfields		$11,018,000	$5	....	.....	2 7/16	.55	1½	.53	72c	⅛
4½	1½	1,600	2	1⅞	1⅞	American Maracaibo	(sh)	700.000	N.P.	....	.....	7½	2¾	9½	3⅛	8⅝	1⅛
1⅝	1	300	1⅛	1⅛	1⅛	Argo Oil	(sh)	683,971	$10	....	.....	2¾	1	4½	2¼	5	1½
21	17	100	17	17	17	British American		1,311,321	N.P.	25cQ*	1- 2-30	40	20½	55	32¾	62	7⅞
2¾	¾	600	1¼	1¼	1¼	Caribbean Syndicate		$131,250	25c	....	.....	28¼	15½	4½	3⅞	4⅞	1
44¼	24⅛	10,500	29¼	29	29¼	Cities Service	(sh)	24,290,359	N.P.	30cA†	1- 2-30	58¾	40¼	90⅞	54	68⅛	20
93⅞	88	100	91¼	91¼	91¼	Cities Service pfd.	(sh)	1,500.000	N.P.	50cM	1- 2-30	95⅜	87	103½	94½	98¾	84
¾	¼	500	¼	¼	¼	Colombia Syndicate		$2,000.000	$1	....	.....	3⅞	1⅛	3¼	.76	2	½
5⅞	3½	100	3½	3½	3½	Consolidated Royalty		$5,000,000	$10	12½cQ	7-25-30	9¾	6⅜	8⅞	6¼	11⅛	2½
7⅝	5¼	300	5⅝	5⅝	5⅝	Creole Petroleum	(sh)	5,977,873	N.P.	....	.....	14⅞	9½	17½	9½	11¾	5⅝
1	¼	100	⅜	⅜	⅜	Crown Central	(sh)	587,000	N.P.	....	.....	3	.50	3¼	.76	2½	¼
21¾	10⅛	300	10⅛	10⅛	10⅛	Darby Petroleum (new)		1,019.392	N.P.	25cvQ	1-15-30	12	4	33½	3¼	26	6½
11	4½	100	6⅞	6⅞	6⅞	Derby Oil & Refining	(sh)	500.000	N.P.	....	.....	2½	74	2¼	1	11	2
60	30	25	50	50	50	Derby Oil & Refining pfd.		48,500	N.P.	....	.....	16¾	4	21⅛	7½	44	20¾
166⅞	115⅛	600	119⅞	118	119⅞	Gulf Oil Corp.	(sh)	4,504,921	$25	37½cQ	1- 1-30	118	86¼	165	101⅛	209	115
1¾	⅝	600	¾	¾	¾	Intercontinental Petroleum		$5,682,000	$5	....	.....	2½	.80	3⅜	1	2⅞	⅝
3	1½	200	1⅝	1⅝	1⅝	Kirby Petroleum	(sh)	750,000	N.P.	....	.....	2¼	1⅛	3	1¼	3⅝	1¼
4¾	1⅛	400	1¼	1¼	1¼	Leonard Oil & Development		$50,000,000	$25	....	.....	10⅞	5⅛	9¾	5⅛	6⅛	1
29	18⅝	100	18⅞	18⅞	18⅞	Lion Oil & Refining	(sh)	250.000	N.P.	50cQ	1-31-30	27½	20	43⅞	20	38⅞	18
55⅞	34⅛	600	39¼	39¼	39¼	Lone Star Gas	(sh)	5,000.000	N.P.	20cQ	12-31-29	59⅜	37	69⅛	48½	67⅞	28
½	⅛	200	3/16	3/16	3/16	Magdalena Syndicate	(sh)	850,000	$1	....	.....	2⅞	.80	1⅞	.50	1¼	⅛
16	12	100	12½	12½	12½	Margay Oils		160,000	N.P.	50cQ	1-10-30	52	12	48½	32	38½	14
7½	2	100	4	3½	4	Mexico-Ohio Oil		.....	...	....	.....	12¼	5	8	2¾	6⅜	2½
¾	⅜	800	7/16	7/16	7/16	Mountain & Gulf		$4,000.000	$1	2cQ	1-15-30	1½	1	1¾	.76	1½	⅛
12⅛	8	200	9¾	9½	9¾	Mountain Producers		$1,682.182	$10	40cQ	1- 2-30	29¼	22¾	28⅞	19½	22⅞	7
3½	2⅜	800	2½	2⅜	2½	New Bradford Oil		$1.095.291	$5	12½cQ	1-15-30	5⅞	4⅝	5⅝	4¼	5	2½
7¼	3⅛	100	4	3⅝	4	New Mexico & Arizona		$1,000.000	$1	....	.....	16	9¼	11⅞	7⅛	9⅜	2¼
11¼	6	200	7	6½	6½	North Central Texas	(sh)	270.000	N.P.	15cQ	9- 2-30	12¾	9½	14¼	8½	18½	6⅛
2½	⅜	3,400	½	1/16	½	Pandem	(sh)	489.875	N.P.	....	.....	9⅜	3¼	6	2⅛	3½	½
4⅜	1⅝	800	2⅜	2¼	2⅜	Pantepec Oil	(sh)	1,506.000	N.P.	....	.....	12⅛	7	15⅝	8½	10½	1⅞
..	..	No sales.				Pennok Oil		150.000	N.P.	....	.....	12½	5⅛	7¾	4⅞	7¾	4⅜
10½	8	100	8	8	8	Red Bank Oil	(sh)	250.000	N.P.	....	.....	24⅜	7	18	4⅞	16	9⅝
5⅜	2⅛	100	3¼	3⅛	3⅛	Reiter-Foster	(sh)	388.584	N.P.	10cQ	12- 9-29	15½	3½	12⅞	4¼	8½	1⅛
8⅝	3⅝	1,000	3¼	2½	2½	Ryan Consolidated	(sh)	500.000	N.P.	....	.....	7	4½	12	4⅛	11	3
2½	1⅜	100	1⅞	1⅞	1⅞	Salt Creek Consolidated	(sh)	1.286.300	$10	10cQ	1- 2-30	8	5¼	7¼	5½	5⅞	1⅞
15¼	8¼	100	10½	10½	10½	Salt Creek Producers	(sh)	1,496.859	$10	50cQ	2- 1-30	35½	27¼	35	23⅛	25⅞	9
1	½	100	½	½	½	Savoy Oil		$750,000	$5	....	.....	7	1¼	3½	1	2½	5/16
..	..	No sales.				Transcontinental pfd.		.....	...	....	.....	..	..	..	..	..	..
4½	2	100	2⅛	2⅛	2⅛	Venezuelan Petroleum	(sh)	755.090	$5	5cQ	11-15-29	7⅜	4¼	9⅛	4¾	6½	1⅜
5	2	300	3⅞	3⅜	3⅞	Woodley Petroleum		$500 000	$1	....	.....	7	4¾	8¼	4⅞	9½	2
2½	½	200	¾	¾	¾	Y Oil & Gas		100,000	N.P.	....	.....	6	1¾	8⅜	2⅛	2⅞	⅛

*Including one-half per cent monthly in stock. †Payable monthly and a monthly stock dividend of one-half per cent. x Ex-dividend.

STANDARD OIL STOCKS ON NEW YORK CURB

Quotations Compiled by Francis, Bro. & Co., Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.

1930 High	1930 Low	Week ended September 10 Sales	High	Low	Close	Stocks—		Outstanding capital	Par value	Div. rate	Last paid	1927 High	1927 Low	1928 High	1928 Low	1929 High	1929 Low
18½	12¼	400	18⅜	18½	18½	Anglo-American Oil (vot. C.O.D.)		£4,192,635	£1	.36.8/7s	11-27-29	21⅝	17⅞	22⅜	14⅞	17	11
1	⅜	100	⅜	⅜	⅜	Atlantic Lobos		.....	...	....	.....	..	..	..	..	..	..
25	14	100	16	16	16	Borne Scrymser		$1,000,000	$25	$1SA	10-15-29	59	50	56½	44½	46½	25
69	54⅛	100	55	55	55	Buckeye Pipe Line		$10,000,000	$50	$1Q	12-14-29	60	45	76	53	74½	55
184⅞	140⅛	100	147	147	147	Chesebrough Mfg.		$3,000,000	$25	$1Q*	12-30-29	126	76½	161	117	210	130
17¾	10	500	10	10	10	Continental Oil (V.T.C.)		$36,057,840	$10	....	12-15-27	22⅝	16¼	23	16	29	10
65¾	30½	200	32	32	32	Cumberland Pipe Line		$1,500,000	$50	$1Q	12-15-29	137	89	114	67	75¾	40
54¾	39	100	39	39	39	Eureka Pipe Line		$5,000,000	$100	$1Q	11- 1-29	68½	47	88	64⅛	70½	42
7	2½	1,000	5	5	5	Galena Signal Oil		$16,000,000	$100	....	.....	13½	3½	13	4¼	6½	3
119	78	1,000	90⅞	88⅝	90⅞	Humble Oil & Refining		$74,103,300	$25	50cQ	1- 1-30	68½	54	114¾	59¼	128	74⅛
320	303	100	320	315	315	Illinois Pipe Line		$20,000,000	$100	$10SA	12-16-29	182	123¾	290½	176½	340½	260
30	18⅛	1,400	21¾	21½	21½	Imperial Oil of Canada (new)	(sh)	26,421,768	N.P.	12½cQ	12- 2-29	64¾	37¾	104	56¾	41	22
41	31¾	200	32⅞	32⅛	32⅛	Indiana Pipe Line		$3,000,000	$10	50cQ‡	2-15-30	94½	61	91⅞	74⅜	41⅞	26
24	17½	1,600	19¼	18⅞	18⅞	International Petroleum	(sh)	14.247,088	N.P.	12½cQ	12-16-29	29	28¼	55	35	30⅜	15
22⅜	15½	600	17	17	17	National Transit		$6,362,500	$12.50	25cQ‡	12-16-29	24	13½	32⅜	19⅜	25⅛	10½
21⅜	10⅛	100	14⅞	13½	14⅞	New York Transit		$1,000,000	$10	40cQ†	1-15-30	44½	31¼	75	38½	17⅛	10
54	35	100	35	35	35	Northern Pipe Line		$2,000,000	$50	$2SA	1- 2-30	100	70	69	56½	63	41
..	..	No sales.				Ohio Oil (new W.I.)		$60,000,000	$25	5cQ‡	12-14-29	67⅞	52	84	58½	79⅞	64⅛
32	17	200	21	21	21	Penn Mex Fuel		$10,000,000	$25	50cQ	12-14-29	39	12	84	28	44½	20
33	10⅜	300	11½	11	11	Solar Refining		$4,000,000	$25	$1.25SA	12-20-29	..	..	..	..	50	29
20⅞	13	100	18¼	18	18	Southern Pipe Line		$1,000,000	$10	5cQ	.....	27¼	15½	19	15	22½	13
45⅞	35	100	37	37	37	South Penn Oil (new)		$30,000,000	$25	50cQ	12-30-29	41½	35	71⅞	36¾	60¼	35⅛
65	35	100	45¼	45¼	45¼	Southwest Pennsylvania Pipe Lines		$1.750.000	$50	$1Q	1-10-29	83	55½	102	70	70	60
59⅞	47⅝	10,500	49⅞	49½	49½	Standard Oil of Indiana		$348,175,069	$25	62½cQ‡	12-16-29	81½	64⅜	95⅞	70⅞	63	45
40½	30⅛	300	31	30⅞	31	Standard Oil of Kentucky		$25,654,516	$10	40cQ	12-16-29	130	111½	179¾	122¼	46⅞	29
48⅞	44½	100	47⅞	47⅞	47⅞	Standard Oil of Nebraska		$4,649.225	$25	62½cQ‡	12-20-29	49¼	40	54⅞	39⅞	50¼	40
108½	74½	100	76⅞	76⅞	76⅞	Standard Oil of Ohio		$14,000,000	$25	62½cQ	1- 2-30	87½	72	134	71	129	60
10	7	100	7	7	7	Swan-Finch Co.		$861,466	$25	....	12- 2-29	21	14½	23½	16	18	10
97⅞	76¼	4,500	79½	78⅜	79¼	Vacuum Oil Co.		$126,180,350	$25	$1Q	12-20-29	..	..	111	72	133¾	75

*Plus 50 cents extra. †Plus 10 cents extra. ‡Plus 25 cents extra. x Ex-dividend.

TRANSACTIONS IN OIL SHARES ON NEW YORK STOCK EXCHANGE

Quotations Compiled by Francis, Bro. & Co., Members of the New York Stock Exchange and Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.

1930 High	1930 Low	Week ended September 10 Sales	High	Low	Close	Stocks—		Outstanding capital	Par value	Div. rate	Last paid	1927 High	1927 Low	1928 High	1928 Low	1929 High	1929 Low
31½	18	500	23⅞	23½	23½	Amerada Corp.	(sh)	922,075	N.P.	50cQ	1-31-30	37⅝	27⅝	43⅞	27½	42⅝	17½
37	15¼	200	16½	16⅜	16⅜	American Republics Corp.	(sh)	209,180	N.P.	....	3-20-29	82½	35⅛	85	51⅛	64¾	12½
51	32½	30	41	40	40	Associated Oil		$57,260,300	$25	50cQ	12-31-29	50¼	35	53⅜	37½	47¼	34½
51⅜	30½	2,600	34¾	33½	34	Atlantic Refining		$66,763,775	$25	25cQ	12-16-29	131⅜	104	66⅜	50	77⅞	30
34	20½	1,900	22½	22⅜	22½	Barnsdall Corp. A		$56,546,600	$25	50cQ	12- 7-29	35½	20¾	54	20	49⅛	20
30½	18⅜	3,200	19½	19	19	Continental Oil of Delaware	(sh)	4,741,554	N.P.	....	3-31-27	..	..	..	..	47⅛	18
71⅛	38⅝	300	43	42¾	42¾	General Asphalt	(sh)	413,333	N.P.	50cQ	.....	96¾	65	94⅞	68	94¾	42¼
116⅞	52¼	5,300	78¾	77⅜	77⅜	Houston Oil		$24,968,600	$100	....	.....	175¾	60⅛	167	79	109	26
32	19⅝	6,000	24¾	23⅞	24¾	Independent Oil & Gas	(sh)	1,362,295	N.P.	50cQ	1-31-30	32¾	17⅝	38⅜	21¾	39⅜	17¾
28⅜	8¾	1,600	11¼	10⅞	11	Indian Refining		$12,565,070	$10	....	5-31-24	12⅛	7⅝	39⅜	9	53	13⅛
29½	21¼	1,400	27⅛	27⅛	27⅛	Lago Oil & Transport	(sh)	3,992,122	N.P.	....	5- 1-27	37¾	20½	39⅛	27¾	38⅜	16½
12	8	1,100	9⅝	9½	9⅝	Louisiana Oil Refining	(sh)	1,190,063	N.P.	....	.....	18⅛	10	19¾	9⅜	18	7
10⅜	4½	100	4½	4½	4½	Maracaibo Oil	(sh)	330,000	N.P.	....	.....	22¾	12	25½	12½	18½	5⅛
37	16⅛	31,500	24¼	23	24	Mexican Seaboard	(sh)	1,244,383	N.P.	....	12-15-20	9¼	3	72	4⅝	59⅜	8¼
35	22½	1,500	23⅜	23⅛	23¼	Mid-Continent Petroleum	(sh)	1,857,912	N.P.	50cQ	12-15-29	39⅜	25½	44½	25⅛	39⅞	22⅛
2½	⅞	900	1	1	1	Middle States ctfs.		$23,736,130	$10	....	7- 1-23	3¾	1⅝	7⅜	2⅜	5⅛	¾
64¼	51⅝	400	55¼	54	54	Pan American P. & T.		$50,084,700	$50	....	10-20-27	65⅞	40⅛	50⅞	38¼	69	40½
67½	50½	200	55	55	55	Pan American P. & T. "B"		$121,110,650	$50	....	11-15-24	66⅜	40¼	58⅞	37¾	69¼	40½
..	..	No sales.				Pan American Western "B"		400,000	N.P.	....	1-30-27	37⅞	16¾	28⅜	15½	18½	13⅝
12¾	4⅛	400	5½	5	5	Panhandle P. & R.	(sh)	199.370	N.P.	....	.....	18⅞	8	21¾	11½	15¼	3
80	47½	100	70	70	70	Panhandle P. & R. pfd.		$2,564,400	$100	....	7- 2-23	83	54	108	70	76	47½
54¾	29¾	9,000	32⅞	32⅛	32⅞	Phillips Petroluem	(sh)	2,593,075	N.P.	50cQ	1- 2-30	60¼	36¼	53⅞	35¼	47	24¼
2½	1	200	1	1	1	Pierce Oil Corp.		$29,622,831	$25	....	.....	1⅛	½	5¼	½	3⅜	1
7⅛	2¼	800	5	4⅜	5	Pierce Petroleum	(sh)	2,500,000	N.P.	....	.....	5½	2½	7	3½	5⅞	½
54	33¾	700	35	34	34	Prairie Oil & Gas		$60,848,000	$25	50cQ*	12-31-29	55½	45⅝	68	46	65⅝	40½
60	44	500	45	44⅞	44⅞	Prairie Pipe Line		$101,250.000	$25	75cQ†	12-31-29	190	130¾	280	172	65	45
11⅞	6½	1,000	7	7	7	Producers & Refiners		$37,438.950	$50	....	9-15-23	33⅞	16¾	29⅞	16	25⅞	4
40	30	20	31	31	31	Producers & Refiners pfd.		$2,845,350	$50	....	5- 1-25	50	36⅞	49⅝	41	46⅜	25½
27¼	19½	2,200	19¾	19⅝	19⅝	Pure Oil		$75,959.250	$25	37½cQ	12- 2-29	33½	25	31⅝	19	30¾	20
28¼	14¾	5,700	17	16½	17	Richfield Oil		$52,410,875	$25	50cQ	11-15-29	28⅝	25⅜	56	23	49⅝	20
25¾	15	700	16¼	16¼	16¼	Rio Grande Oil	(sh)	1,236,270	N.P.	$2A	7-25-29	..	..	37½	32	42½	15
56½	45¾	3,100	48⅜	47¾	48¾	Royal Dutch, N. Y.	(sh)	611,303	$1.873	....	9-13-29	54½	44¼	64	44⅝	64	43⅛
48¾	40	30	41⅝	41⅝	41⅝	Shell Transport & Trading Co.		£23,985,000	£1	$1.45	7-23-29	48⅝	40½	47⅞	41⅜	51½	40⅝
25½	14	1,600	14¾	14⅝	14¾	Shell Union Oil	(sh)	13.066.497	N.P.	35cQ	12-31-29	31¾	23⅝	39¼	23¼	31¾	19
37	18	400	21¾	21⅜	21¾	Simms Petroleum		$8.353,620	$10	40cQ	12-14-29	25⅜	14¼	27¼	18⅛	40⅛	15
32	20	17,200	22¼	21¼	21¾	Sinclair Consolidated	(sh)	5,500.000	N.P.	50cQ	1-15-30	22⅜	15	46¾	17⅜	45	21
112¼	108	200	110½	110⅜	110⅜	Sinclair Consolidated pfd.		$16 025.250	$100	$2Q	11-15-29	104½	97	110	102½	111	103
42	27	800	27	27	27	Skelly Oil		$27,441,250	$25	50cQ	12-16-29	37⅜	24⅛	42⅝	25	40½	28
75	55½	5,000	60⅝	60⅛	60½	Standard of California	(sh)	12.594.098	N.P.	62½cQ	2-15-30	60¾	50⅜	80	63	81⅞	51½
49	29	500	30	29½	30	Standard of Kansas		$8.000.000	$25	50cQ	12-16-29	20⅞	14⅝	37¾	15	33⅜	18
84⅞	58	24,700	70	68⅜	69½	Standard Oil of New Jersey		$634.999.200	$25	25cQ*	12-16-29	41⅜	35⅛	59⅜	37¾	83	49
40¾	30	8,400	31⅜	30½	31	Standard Oil of New York		$445,223.675	$25	40cQ	12-16-29	34⅛	29¾	33¼	28¾	48⅛	31⅜
70	50	200	59½	59	59	Sun Oil	(sh)	1,416.869	N.P.	25cQ	12-16-29	34⅞	30	77	31½	68⅜	55
9⅜	2	300	2½	2¼	2½	Superior Oil Corp.	(sh)	776.979	N.P.	....	12-20-20	..	..	..	..	24	5¼
60½	50¼	4,100	51⅞	51	51⅜	The Texas Corp.		$246.204.900	$25	75cQ	1- 1-30	58	45	74⅜	50	71⅞	50
14½	8¼	300	8½	8⅜	8½	Texas Pacific Coal & Oil Co.		$9.304.890	$10	2½%A‡	12-31-29	18⅞	12	26⅝	12½	23⅞	9½
31	19½	200	30¾	28¾	30¾	Tide Water Oil	(sh)	2.191.759	N.P.	20cQ	12-31-29	29⅛	19	41½	19⅝	40	14
94⅞	83	100	90½	90½	90½	Tide Water 5% pfd.		$19 947.000	$100	$1.25Q	11-15-29	90⅛	85	100⅛	86	97½	85⅛
17¾	10¾	1,100	13⅜	13¼	13⅜	Tide Water Associated	(sh)	5.560.424	N.P.	30cS	2-15-30	19⅛	15¾	25	14¾	23½	10
89¾	78	100	84¼	84¼	84¼	Tide Water Associated pfd.		$73.284.500	...	$1.50Q	2- 2-30	..	..	..	..	90⅞	74⅛
24¼	16¼	57,900	24¼	22⅞	24¼	Transcontinental Oil	(sh)	3.742.029	N.P.	....	.....	10⅜	3¾	14⅜	7¼	15¼	5⅛
50	37	400	40⅞	40¼	40⅞	Union Oil of California		$104.342.375	$25	50cQ	11- 9-29	56½	39⅝	58	42⅜	57	42⅛
38½	25⅛	400	26	25⅝	25⅝	Union Tank Car	(sh)	1,254.048	$100	$1.25Q	12- 2-29	127½	94	128¼	110	163¾	121⅞
27	11	200	11½	11⅛	11½	Warner-Quinlan	(sh)	632.948	N.P.	50cQ	1- 2-30	34½	24½	44⅞	26	42⅞	15
..	..	No sales.				White Eagle Oil & Refining	(sh)	505.100	N.P.	50cQ	1-20-30	27¼	20	38	20⅛	38	25
21	11½	100	15¼	15¼	15¼	Wilcox Oil & Gas	(sh)	428,907	N.P.	....	5-10-28	..	..	..	..	29¾	12⅞

*Plus extra dividend of 25 cents. †Plus extra dividend of 50 cents. ‡Payable in stock. x Ex-dividend.

In comparing highs and lows for the several years in the three tables, it will be necessary to take into consideration cases where there have been splits in the stock.

CHICAGO OIL MARKET IS FAIRLY ACTIVE

(Continued from Page 136)

lowed his customers too liberal terms and private rebates. The Indiana bankers were told at their recent meeting that the trouble with the banking business was too many banks. In that respect, the banking business resembles the oil business if in no other.

Situation in Michigan

The situation in Michigan shows little change for the better, prices being named that are so low that it is hard to see how the refineries at differential points are able to make a profit, let alone the Group 3 refiners. Detroit is a very bad point. A jobber gave his assurance that he could buy U. S. Motor gasoline at 4 cents, Group 3. He was pronounced a story teller by several oil men who sell to Michigan points but it is possible he might be true, when one considers the prices which have been made for some orders. From all parts of the surrounding territory refiners are shipping their gasoline ot Detroit and it would seem that anything was possible at that point. Here in Chicago there has been some cutting of prices by the smaller local plants but they are now holding for the price although some gasoline has been sold to local distributors at at least 6 cents and some claim to have bought on old quotations at 5¾ cents. The demand for the higher gravities has been very limited. Some look for a higher price and a better demand for these high gravity gasolines with the coming of cold weather, but last winter the motorist turned to Ethyl Gasoline with surprisingly good results. Many of the Ethyl Gasolines on the market have as a base a 400 endpoint gasoline and last winter two refiners supplied Ethyl Gasoline which had a 375 endpoint material as its base. Many believe that the demand for the higher tests will continue light and that they will be replaced by Ethyl. There is a fairly good demand for natural gasoline and this will improve to a certain extent with the higher prices asked for the regular gasoline. There is a considerable amount of blending of naphthas with natural gasoline going on all the time and this may increase if the prices permit of it being done profitably.

Kerosene Dragging

Kerosene is still dragging along with light sales and refiners hopeful of a better business in the near future. The use of tractors for fall plowing is still held back by the dry weather. The weather bureau has predicted that the drought conditions would continue until the end of October, which means until the ground is liable to be frozen. Some refiners have advanced their price but at present their prices are above the rate at which 41-43 kerosene can be bought. The market is close to 3⅛ cents and the advance in gasoline is steadying kerosene and with a larger demand it might move up a little but there will be no improvement in the consumption until the country has general rains.

Furnace Oils

Furnace oils are more active. The jobbers are preparing for their first fills. More has been heard on the attitude of distributors regarding the matter of credits. For one thing the distributors in many separate points have resolved not to offer to fill the tanks of customers before they actually need the oil, with the idea that by so doing the jobber could take in more oil into his own stations. Several different jobbers have stated that the plan only put the furnace oil business on a long time credit basis. The customer had a fill on credit to induce him to take in the material. He then wanted the same credit extended for each delivery. This season the jobber will wait until the customer needs the oil, orders it, and he will have to pay for it within a very reasonable time, if not cash on delivery. They may have to take the stand of the coal men who are striving to avoid the practice of permitting their customers to fill their bins and then wait until the following summer before paying for the coal. It has been nearly as bad as that with some of the trusting oil men who last summer were collecting for the preceding winter's fuel.

The demand for furnace oils while not overly large, has been sufficient to prove the shortness of the supply of straw, zero gas oil. The U.G.I. gas oil is also hard to buy but that is not a furnace oil. The dark or amber gas oils are plentiful. Clean, low sulphur, low viscosity zero fuel oils are not plentiful and there is a tendency to mark the price up. High grade distillate is also being held by some refiners at say one-eighth cent more. But even with the advances asked by some refiners the market prices are below the minimum prices named in most contracts. This is being got around by some who claim that their contracts do not go into effect until October 1, and who are selling at "summer prices," in the meantime. One of the larger refiners, which has a great number of contracts, has sent out a rider to these contracts reducing the minimum price by a dime and advancing the maximum price the same amount. It is understood that the sales department had to adavnce the maximum to make the cut in the minimum look good to the management. This company now has a range of 50 to 90 cents a barrel on 18-22 zero, fuel oil. At present, the top price in this market for that grade of oil is not far from 50 cents. Some claim that the market for that particular oil is up to 52½ cents but were it not for the change in the contract, the minimum price would be prohibitive. There has been a good deal of complaint regarding the lack of shipping instructions due to the fact that the jobber could buy in the spot market at less than the minimum price in his contract. Many of the contracts made recently have no maximum or minimum price named. The dealers expect a large demand for furnace oils this season, basing their ideas on the average increase in the number of oil burners installed each year. Should the number be large it would prove that the oil burner was popular. The demand for the automobile has shrunk during the summer while the demand for the oil burner has, according to the agents for the burner makers, shown a great increase. But there will be enough oil burners in use to give the oil industry a large demand for furnace oils, if the winter is normal.

Gas Oils Firm

The inquiry for the U.G.I. gas oils has not been really active yet there are some of the gas companies which are buying for stock and the demand from the month to month buyers is increasing slowly but steadily with the shorter days and colder weather. Some of the gas companies are running to coke and to obtain it they are burning coal instead of oil which fact has knocked out a couple of sizable contracts. The market is very firm and while some are holding their former prices to sell to the users, the best buying price for really representative U.G.I. oil is 2⅛ cents. Group 3. The usual run of lower gravity, or of full gravity but lower quality oils, continues but the tendency even on these is slightly upward.

Industrial Fuel Oils

The market for industrial fuel oils is more active and some grades are a little higher as to prices. Some claim that the advance amounts to 2½ cents a barrel, but this is true only of the zero oils, which are really desirable. The cheaper grades are just about where they were as to price although the demand is better. Buyers will buy now and do it without much urging if the material and the prices are satisfactory. All summer the plan has seemed to be to get prices and then wait a few days before placing the order, if the order was placed at all. The demand is from the industries which are, and there are many of them, resuming work or increasing their output. The industrial demand is not so large as it was say two years ago, or even last year up to the time of the break in the stock market, but it is just about where it was in 1928 or any other average year for that matter. The unfortunate news of the week has been the reduction in the "backlog," or list of unfilled orders of the United States Steel Corp. The industrial world had hoped that it might show some increase. Possibly the reason is that they have tried to do away with price cutting which was nearly as bad in the steel as in the oil business. The various industries are resuming work very slowly and but little was expected from them until after the middle of this month. Reports of the August business done are generally unfavorable from the comparison with last August. It will be only a couple of months before we shall have a condition that was less favorable a year ago to compare with and then we shall find that the business of the nation is not so bad as it might be.

The Shell Petroleum Corp. announced to its customers last week that it was out of the market for several grades of fuel oil and on all gas oils. Dealers who thought that this was a mistake or a bluff and tried to buy during the week, found that the company meant what it said, all orders being refused. Sinclair and the Standard have had little oil to sell in the higher gravities but have a large quantity of very heavy fuel oil which they might like to market were it possible for them to do so. The Sinclair company quoted 50 cents as its lowest price on its 16-20 fuel oil. The Globe Refining has some oil in storage for which it is asking around 55 cents, Group 3. This about takes care of the local refineries. The Texas Company has heavy oil to sell and not much else in the fuel oil line. The Empire refinery has been offering coke for the most part, having very little fuel oil to dispose of. It may be back in the market later. It looks very much as if the bulk of the oil to be sold and delivered by the tank car dealers will come on contracts with some refinery outside of the local list although most have some local contracts. The Indian Refining Co.'s liquid asphalt is being sold by some of the local dealers. Others have contracts for Texas fuel oil, in fact the refineries have been ransacked for material. The lack of activity in the automobile industry let free a quantity of fuel oil that would have been taken by the Cleveland and Detroit automobile plants had they been working and in seeking a market the eastern refiners have even come as far west as Chicago where the Sun Co. has sold a quantity of fuel oil. It is good fuel oil and is liked here and will be gladly received by users just as long as they can secure it as the specifications are almost ideal for a fairly heavy fuel oil, low in sulphur, and with a low viscosity. The outlook is for a gradual improvement of the demand and with the coming of colder weather that will be helped by the call for oil for heating purposes.

Lubricating Oils

There is very little new in the lubrication situation. The jobbers are ordering in a light way, their first shipments of winter oils. It looks as if when the jobber needed some lubs he placed the order for winter oils. The industrial demand is still light. The market for refinery stocks is unsettled with sales being made of western bright stocks at the same level or a little les than the eastern grades.

In the distributing end of the business, the chief news item is the number of cuts made in retail prices, either station or wagon and station. The expectation is keen that the scale will be cut but the belief of well posted oil men is that so long as the refinery markets continue to advance and nothing happens to crude prices, that the major distributors in this territory will allow the present prices to continue. Prices have not been reduced in the largest cities of the territory, but they have come very close to doing that thing when the tank wagon prices are reduced in St. Paul and Minneapolis, Kansas City, Indianapolis, Grand Rapids and cities of that size. A price cut of 2 cents a gallon in these cities hurts the major companies more than a like reduction at a hundred minor points. Therefore it means more to the industry, and logically the next step would be a reduction in the prices in the entire State or a general reduction over the whole territory. What the trade is waiting for is the taking of that final step.

COLUMBIAN CARBON TO INCREASE STOCK

(Continued from Page 146)

in the preferred 5 per cent stock of $50 par may be settled by delivery of either certificates of $50 par value or the equivalent in certificates of $10 par value.

United Carbon

In the first half of 1930, United Carbon Co.'s net income of $468,229 was 44 per cent below net reported for the first half of 1929 and the second quarter's net of $204,929 was about 52 per cent under a year ago. Destructive competition in the carbon black industry, and curtailed operations of rubber tire manufacturers who use the bulk of the carbon black output, caused shrunken profits in that division.

Curtailment of operations and actual shut down of industrial plants in the southern states resulted in decreased takings of natural gas by pipe lines emanating from the Richland and Monroe Fields in Louisiana, precluding United Carbon from realizing earlier plans for expanding gas sales.

During the first seven months, United Carbon conducted in the eastern Kentucky fields a wide exploration program which has demonstrated the existence of natural gas estimated by independent engineers at 400,000,000,000 feet, sufficient to supply a pipe line of 50,000,000 feet daily for 26 years. Company has expanded its acreage in the district and now holds more than 90,000 acres, principally in Floyd, Knott, Magoffin and Pike Counties.

Future construction of transportation facilities by pipe line companies should provide outlets for the gas taken from this territory in such states as West Virginia, Ohio, Indiana, Pennsylvania and Michigan, and several other northern localities, as well as the entire southeastern section.

United Carbon's management believes that the company has a bright future in the rapidly growing natural gas industry. Acquisition of additional gas acreage includes in excess of 2,200 acres purchased in Moore County, Texas, about one-half of which is in the recently discovered Moore County oil field. In other sections of Texas, company holds some 4,000 acres. None of the gas has been marketed. Other leases for future reserves have been acquired in New Mexico and other southwestern states.

CRUDE OIL PRICE CHANGES

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$1.90, effective September 14. This is for oil produced in southeastern Ohio. It was a delayed price increase, as all other grades of Pennsylvania oil, produced in New York, Pennsylvania and West Virginia were increased 15 cents per barrel on August 22.

The Standard Oil Co. of California reduced the price of California crude oils above 23.9 degrees in gravity in various fields in California where it purchases on a gravity basis, effective September 15. The reductions ranged from 2 cents to 12 cents per barrel according to gravity, the higher gravity crudes suffering the deepest cuts.

ADDITIONAL DETAILS OF HYDROGENATION

(Continued from Page 140)

lub oil production through hydrogenation unless additional uses for wax can be developed.

Supplement Presents Process

Contrary to general beliefs, except that of those who have been following closely the development of hydrogenation, the company's statement says, the process will not interfere with present refining methods but rather will supplement existing refining facilities and furnish a method for processing noncommercial residues from present refining operations. Notwithstanding the fact that costs of manufacturing petroleum products by hydrogenation will be greater than by other modern refining processes it is said the fact that noncommercial residues can be used as a raw material will make its operations, particularly by the larger re-

fining companies which have large quantities of noncommercial residues from their operations, profitable under prevailing prices for refined products.

Licensing Plan

Announcement by Standard Oil Co. of New Jersey that results of its Bayway plant have exceeded expectations is expected to give considerable impetus to the development of hydrogenation plants by other American oil companies. Under the plan for this development improvements in the present process will be shared in by all companies affiliated in the work. Development in the United States is in the hands of the Standard-I. G. Co. which was organized last year by Standard Oil Co. of New Jersey and the I. G. Farbenindustrie. This company controls the development of hydrogenation and all patent rights outside of Germany. This work is being handled in the United States by Hydro Patents Co. which makes available patents and processes to American refineries. In addition to Standard Oil Co. of New Jersey, 18 other American oil companies now hold stock in Hydro Patents Co., which automatically licenses them for the use of the process in this country.

All of the stock in Hydro Patents Co. was held originally by Standard Oil Development Co., a subsidiary of the New Jersey company. It is understood that 20 companies were invited to take stock in the company and participate in the development of hydrogenation, all but two accepting. This stock was offered in proportion to the daily hydrogenation capacity of the licensee. In the original offering of stock to the various companies the price was $53 per share in the proportion of one share of stock for every 160 bbls. of crude oil run through stills daily, no company with refinery capacity of less than 20,000 bbls. daily being invited to participate in the development. A purchase of a block of 20,000 shares it is understood gives the purchaser full participation, which means that the size of the hydrogenation plant to be constructed by the licensee is not restricted. If for any reason the purchaser of stock in Hydro Patents Co. does not wish to go ahead with construction of a hydrogenation unit the stock will be repurchased by Hydro Patents Co. at $1 per share. In the event that more than 50 per cent of the group now affiliated with Hydro Patents Co. decides against going ahead with construction of hydrogenation units, the full purchase price of the stock is to be refunded.

In addition to purchasing stock in Hydro Patents Co. licensees will pay a royalty to Hydro Patents of 5 cents a barrel on all charging stock. In addition there will be a royalty of 38 cents per barrel on all lubricants made through hydrogenation and 5 cents per barrel on regular gasoline, with a larger royalty on all gasoline having antiknock qualities.

Kerosene production will be taxed 3 cents per barrel and all other products 2 cents per barrel. In addition, Standard-I. G. Co. reserves the exclusive right to manufacture and sell the catalyst, the composition of which has not been divulged for a period of five years.

Technical Control

The technical end of hydrogenation is controlled in this setup by Hydro Engineering & Chemical Co., a subsidiary of the Standard Oil Development Co. which is the operator of the Bayway experiment hydrogenation plant. Upon request of the Hydro Patents Co. this unit will make available the technical information required by the licensee companies. The engineering and chemical company will handle the design, construction and initial operation of all hydrogenation plants in the United States. It is understood that several of the licensee companies have already decided to go ahead with construction of hydrogenation units.

It is also reported here, however, that a number of the representatives of oil companies now affiliated with Hydro Patents Co. are not favorably impressed with the hydrogenation process as a commercial possibility in the United States at this time. These representatives have just concluded a visit of inspection to the I. G. Farbenindustrie plant in Germany. It is said that their objections are based principally upon the high cost of construction of hydrogenation plants and their high operating costs in comparison with other refining processes now largely used in this country.

Operating Costs

These representatives, however, are quoted as being of the opinion that these costs will eventually be substantially lowered as the development of the process continues. Some progress in this direction has already been made Standard Oil Co. of New Jersey announcing this week that a cheaper method of making the hydrogenation gas has been discovered. The cost of this gas was one of the principal drawbacks of the process now used in Germany. In addition the New Jersey company says construction costs have been lowered through the elimination of some features and the simplification of others. In fact, the New Jersey company says, some products can be made more cheaply by the hydrogenation process than by the present refining methods and where this is not the case the added cost is more than offset by the manufacture of a superior product. The Bayway plant of the New Jersey company was built to turn out 5,000 bbls. of refined products per day. Due to the fact that this is the first commercial plant to use fuel oil as a base the company states its actual capacity has not yet been ascertained as the plant is just being "broken in." Construction of the plant required 13 months and cost in the neighborhood of $5,000,000. Through experience gained in construction work at Bayway, however, it is stated that this plant could be duplicated with a cost of little more than $2,500,000.

Plants Under Construction

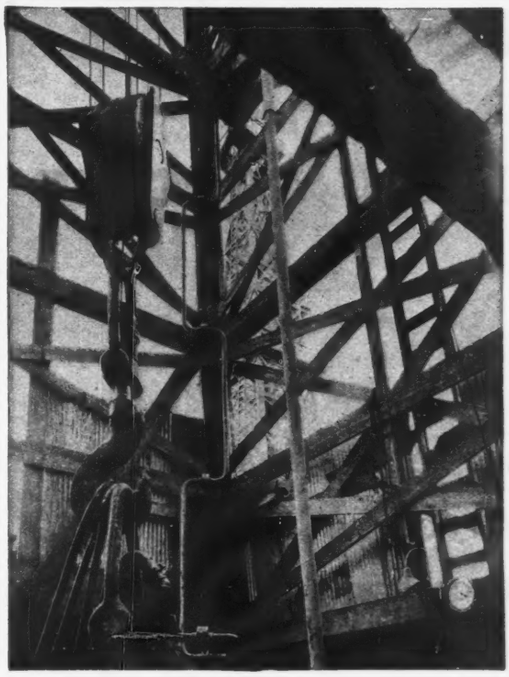
Construction is now proceeding on similar hydrogenation units at the Baton Rouge, La., refinery of Standard Oil Co. of Louisiana and the Baytown refinery of Humble Oil & Refining Co., both subsidiaries of the New Jersey company.

"To understand this new refining process," the statement issued by the New Jersey company says, "it is important to remember that all petroleum products are made up of compounds consisting of hydrogen and carbon in various arrangements and proportion. In the hydrogenation process hydrogen may be added to the particular petroleum fraction being processed to give to this cut the desired properties.

"Very simply then the hydrogenation process is this: Hydrogen in gaseous form—to be made at Bayway for existing refinery gases—combined with the basic petroleum stock and subjected to 3,000 pounds pressure per square inch. By varying the amount of hydrogen added it is possible to obtain products of predetermined and superior quality. The essential difference between the cracking process and the hydrogenation process in general lies in the fact that the cracking breaks down the petroleum atoms while hydrogenation builds them up. Cracking with 1,000 pounds pressure applied decomposes oils to yield some 60 per cent of gasoline and 40 per cent low quality residue. In hydrogenation, the pressure and temperatures used make it possible in the presence of the catalyst to add hydrogen to oils and produce yields running much higher.

"Cracking was the first major attempt on the part of the petroleum refiner to shift the chemical structure of either petroleum or its distillates. Hydrogenation is a long step forward in this same direction. It is, however, a building up rather than a breaking down process and an extremely close control can be exercised over the chemical composition of the product.

"The supply of crude oil is not unlimited. It is possible that the supply of certain crudes will be exhausted within two or more generations. Consider then the hydrogenation process which may use low grade crude oils, coal, even such inferior grades as lignite, and in fact any carbonaceous materials, the process utilizes equally well the lowest grades of crude oil, coal, shale, or even peat. It is a process of sufficient flexibility to allow, with the same equipment, the production of motor oil, kerosene and antiknock gasoline by merely varying the operating conditions."



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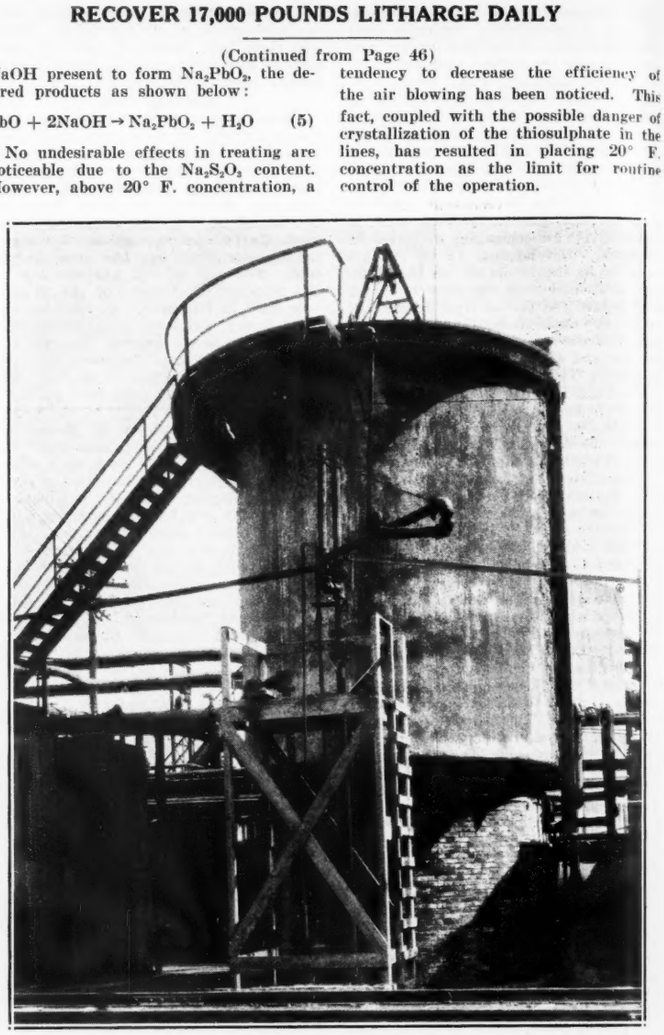
(Continued from Page 46)

NaOH present to form Na_2PbO_2, the desired products as shown below:

$$PbO + 2NaOH \rightarrow Na_2PbO_2 + H_2O \quad (5)$$

No undesirable effects in treating are noticeable due to the $Na_2S_2O_3$ content. However, above 20° F. concentration, a tendency to decrease the efficiency of the air blowing has been noticed. This fact, coupled with the possible danger of crystallization of the thiosulphate in the lines, has resulted in placing 20° F. concentration as the limit for routine control of the operation.



Steam heated break tank which facilitates separation of the light oil and the sludge.

GAS RECOVERY AND STABILIZING PLANT

(Continued from Page 38)

by partial or total debutanization the crude oil and pressure distillate prior to further processing, thus eliminating the necessity for collecting vapors from the refined oil tanks. However, the construction of the crude stabilizer was set aside for the present as yielding the smallest return, due to the fact that a rather heavy crude is handled and it was thought that losses could be minimized by stripping the gases from the first stream at around 150° F., the stream being aftercooled before going to storage. This decision seems to be justified by the lack of vapors coming from this product in rundown storage.

It further developed that in view of the rather small quantity of vapors, estimated at a maximum of something under 2,000,000 feet, the most economical method of handling, both from a standpoint of first cost and operation, was to eliminate the absorption step entirely, and discharge the gases from the high stage of the compressors direct to the final stabilizing column.

Provision was also made for stabilizing purchased natural gasoline, when the market justified this step.

The contract was let April 28 to the Petroleum Engineering Co. of Tulsa, which erected the plant complete, the first unit being placed in operation July 4, and the remainder of the plant about 10 days later. The entire cost was slightly under $100,000, including service hook-ups as well as contract cost.

Referring to the flow sheet, the pressure distillate is charged from rundown storage by means of a centrifugal pump E through heat exchanger B and steam preheater C into debutanizing column A where it is stripped of its lighter fractions. In actual practice it has been found that from 15 to 20 per cent of the pressure distillate may be recovered overhead which has a satisfactory color and gum content. This column was designed for pressures up to 75 pounds, but is operating at 30 pounds at present. The analysis of the overhead product is as follows:

	Mol %	Liquid volume %
Methane	...	.....
Ethane	7.87	4.8
Propane	7.87	5.36
Butanes	27.09	21.75
Pentanes	31.03	27.88
Hexanes and heavier	33.14	44.52

The debutanizer bottoms have an Engler distillation as follows:

Gravity	48.2	50%	351
ID.	140	60%	375
10%	208	70%	404
20%	250	80%	426
30%	283	90%	441
40%	318	99% endpoint	462

This product is stable as far as evaporation losses are concerned throughout the remainder of its journey through the treating and recovering equipment and in storage.

Overhead Product

The overhead product is taken to the condensing sections in the cooling tower and partially condensed, the liquid passing through a liquid level controlled separator to stabilizer feed tanks F. The uncondensed vapors go to the suction scrubber of the twin gas engine compres-

sor G, although they may be taken under vacuum to that of the single stage compressor H in case the debutanizer is operated at pressures less than 20 pounds. The single stage or low pressure compressor H also exhausts tail gases from the crude distillation streams, as mentioned above, and it is planned to bring to it the vapors from storage and working tanks containing crude and possibly vapors from the loading rack.

The gases from this compressor are discharged under a pressure of 45 pounds through a cooler in the cooling tower, and the condensate separated and discharged to feed tanks F, the remaining gas passing to the suction scrubber of high pressure compressor G.

From the low pressure cylinder of this machine the gases pass through a cooler to another vapor separator, where the condensate is dropped out under a pressure of 80 pounds, and led to feed tanks F, the uncondensed product returning to the high stage of the compressor.

Pressure on this vapor separator, and also that on the discharge of compressor H are maintained by back pressure regulators.

Mixed gas and liquid emerge from the high stage cylinder at pressures varying from 250 to 350 pounds, depending on the percentage of butane recovery desired, and are fed into the side of the rectifier, J, at one or more of several optional points. Just before entering the column, they mix with the liquid feed from tanks F which has been treated by passing through an exchanger and preheater similar to those on the debutanizer. Reboiler bottoms in the former and steam in the latter serve as heating media. The inlet temperature of this mixture of gas and liquid feeds is in the neighborhood of 250° F.

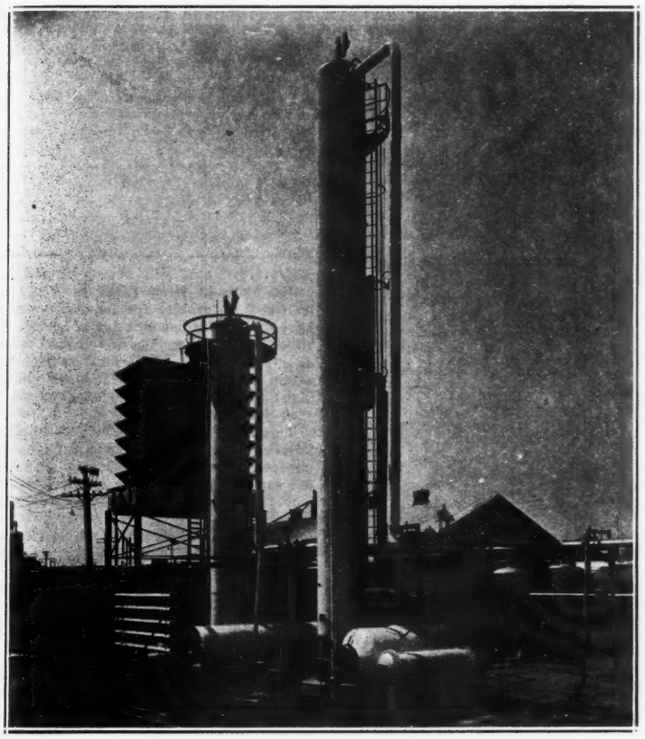
The overhead from the column passes to condensers, where it is partially condensed and cooled to about 75-80° F., varying amounts of the condensate being replaced in accordance with the product desired. The feed to the rectifier and the reflux to both the columns is controlled by volume controllers of the Foxboro type.

Separate back pressure regulators on the rectifier and its reflux separator insure constant pressure maintenance, as does a similar instrument on the debutanizer reflux separator.

A liquid level is maintained on the rectifier reflux separator by means of a float control which upon opening as the level rises by-passes the back pressure control on the separator, allowing the pressure on the vessel to drop to a point at which the liquid weathers down to the desired level.

Reboiler temperatures are automatically controlled, that of the rectifier by a Brown trend analyzing instrument, and that of the debutanizer by a Foxboro control. The operation of all control equipment has been most satisfactory, as is attested to by the charts and records.

All water cooled surface is of the bent tube open type, and the tower structure built to support it has proved equal to the task of subcooling the water after passing over the heated surface in its drop to the basin below, so that by adding just enough well water at 70° F. to compensate for evaporation losses, recirculated water temperatures of from 75° to 80° have been obtainable in the hottest weather.



Fractionating columns and heating equipment of the Kanotex Refining Co. stabilizing and recovery combination unit.

The product from the rectifier, when containing about 80 per cent of the available butane, and the residue gas from the plant have the following characteristics:

	Residue gas mol %	Rectifier bottoms liquid %
Methane	71 7	....
Ethane	5.4	....
Propane	15.7	.6
Iso-butane	3.0	38.5
N. butane	4 2	
Pentane	....	31.7
Hexane	....	29 3

It has not up to the present time been desirable to use a greater amount of butane, but if desired, the recovery may be increased to something over 90 per cent.

The rectified product is then taken to a small continuous treater, not shown in the flow sheet, which sweetens it on its way to storage by the sodium hypochlorite method. From the treater the product goes to horizontal storage tanks, where it is held under pressure until used in blending. Most of the blending is done in an orifice mixer on the discharge of the gasoline loading pump, the stabilized light product being pumped to the mixer through a separate line. It is handled by a close clearance steam pump made by the Worthington company.

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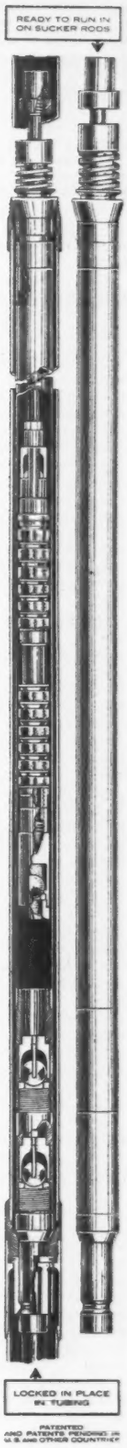

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Compressors were installed for gas volumes only slightly in excess of 1,000,000 feet, but provisions were made for the installation of a second high pressure engine compressor should the available gas increase. Compressors are of the Clark Super-Two type, and are operating with a very low percentage of down time, which makes it possible to operate the plant without a spare engine.

The plant as a whole is very flexible and smooth in operation, and requires the services of only one full time operator and one part time engineer per shift, and promises to be a most valuable aid to the economical operation of the refinery.

JULIAN CASE DELAYS PRORATION PLANS

(Continued from Page 37)

ders against the Julian company. This action put the Julian company, with its two producing oil wells, back on the same basis as the companies in the Oklahoma City Field which had strictly obeyed the commission's orders since the beginning of proration in that area. Up to the day the court vacated the temporary injunction the Julian company had overproduced on three days from one well and two days from its other well. Both wells were shut down on the day the court vacated the temporary injunction.

The action of the court did not indicate its decision on the validity of the conservation laws. On the following day Justice Robert Hefner of the Supreme Court disqualified himself because, as he stated, he owned royalty interests in the South Oklahoma City Field. Guy Green, attorney of Waurika, was appointed a special justice to act in the place of Justice Hefner and immediately joined his fellow judges in the consideration of the case.

The Champlin Refining Co., while not becoming a party to the Julian suit, filed an amicus curiae petition with the court in which it sought to strengthen the argument of Julian's counsel both in its brief and arguments. The Champlin company has two oil wells in the Oklahoma City Field which it desires to produce wide open. Its No. 1 Naden had been on steady production since its completion and No. 1 McCulloch had been producing several days when the company filed its petition. Both wells were shut in on September 11 and have been shut in ever since, up to this writing. The Marco Oil Co., another protesting company, also shut in its well after the announcement of the court's action on the temporary injunction.

UNITIZATION BENEFITS IN SEMINOLE SHOWN

(Continued from Page 37)

area had been handled differently will serve only to emphasize the need of the industry for using caution in pools still to be produced and it is therefore felt that in the interest of unitization an analysis of some of the things that happened in Seminole will be worthwhile.

A record of production in the whole Seminole area up to and including June 30, 1930, is given below:

Pool—	Wells	Recovery bbls.	P'dt'ive acreage*
Little River	458	69,268,026	4,880
Carr City	46	5,824,268	560
Maud	135	7,021,667	2,120
Mission	104	11,389,819	1,940
Bowlegs	280	77,378,766	4,080
Earlsboro	469	110,075,945	6,250
Seminole	299	90,320,999	4,360
Searight	83	23,654,950	1,320
St. Louis	487	56,471,914	7,670
Total	2,361	451,406,364	33,180

*Estimate of "Productive acreage" is as of January 1, 1930, and has been increased somewhat since then by new wells brought in.

In this area it is reported that there were 456 dry holes and 69 gas wells, and that 542 wells had been pulled and plugged by June 30, 1930, which would make the total number of borings in this area 3,427 and upon the basis of one well for each 10 acres this would give 34,270 acres explored or 1,090 acres more than reported January 1, 1930.

Based upon the 34,270 acres drilled the amount of oil produced per acre will be approximately 13,172 bbls., but it is a well-known fact that some leases produced over 100,000 bbls. per acre while others produced 60,000, 70,000 and 80,000 bbls. but those leases were exceptionally well located on structure and can hardly be used as representative of what the whole field has produced.

In the above analysis the Maud and St. Louis Pools reduce the average considerable, but in the Report of Investigations No. 2,997, "Engineering Study of the Seminole Area," compiled by the United States Bureau of Mines it is estimated that the oil recovery from this area was 16,798 bbls. per acre and this recovery is based upon 20,490 productive acres, as of July 1, 1929.

The question of actual recovery per acre will be an open one until such time as the principal producers in the area get together and make a complete analysis of their combined records.

Comparative Operations

In the 1928 Annual Report of the Mid-Continent Oil and Gas Association, Clarel B. Mapes, technologist, makes an analysis of actual and probable development conditions in the Greater Seminole area for the Seminole City, Searight, Earlsboro, Bowlegs and Little River Pools and this form is followed in the following analysis brought down to June 30, 1930, but includes all pools:

DEVELOPMENT AND PRODUCTION COSTS OF THE GREATER SEMINOLE AREA

Drilling cost for 2,378 producing wells @ $67,200 each		$159,801,600
Development and production equipment:		
For all wells (2,378) @ $6,600 each	$15,694,800	
For 1,100 air lift wells @ $30,000 each	33,000,000	48,694,800
Drilling cost for 456 dry holes @ $56,127 each		25,505,912
Drilling and development costs for 542 wells pulled and plugged at $75,000 each		40,550,000
Total development cost for 3,376 borings on 33,760 acres		$274,552,312
Estimated cost of leases in Greater Seminole area including litigation and miscellaneous expenses		$25,320,000
Tankage—237 55,000-bbl. tanks at $0.40 per bbl.		4,214,000
166 80,000-bbl. tanks at $0.33 per bbl.		4,426,667
Estimated cost of privately owned pipe line, loading racks and railroad sidings		1,000,000
Lifting costs on 451,406,364 bbls. of oil @ $0.20		90,281,268
Grand total estimated costs to producers		$399,794,247

PRODUCTION AND REVENUE TO PRODUCERS FROM GREATER SEMINOLE AREA

	Bbls.	Bbls.
Total production as of June 30, 1930		451,406,364
Deductible items:		
Total royalty—12.5 per cent of production	54,425,795	
Oklahoma gross production tax—3 per cent	13,542,191	
Pipe line charge for B.s.—3 per cent	13,542,191	
Total deductible items		81,510,177
Net production to producers' account		369,896,187
Income to producers on 369,896,187 bbls. @ $1.42 av.		$525,252,585
Less cost of production		399,794,247
Estimated net income to producers		$125,458,338

In making the above estimates there are naturally some figures used that may be debatable but the number of producing wells has been checked with three of the major companies and the quantity of oil produced is a matter of record and checked. The dry holes and wells pulled and plugged are known and the acreage developed upon the basis of one well to each 10 acres checks fairly close with the acreage given in preceding table. With these known factors and using the method followed by Mr. Mapes it is thought that this estimate will give a fair idea of what the Greater Seminole area has thus far produced and the net income to the producers.

As a comparison of what is known and what might have been accomplished under unitization the following analysis is given:

PROBABLE DEVELOPMENT AND PRODUCTION COSTS OF GREATER SEMINOLE AREA UNDER HYPOTHETICAL UNITIZATION PLAN OF ONE WELL TO EACH 20 ACRES

Drilling cost for 1,500 producing wells @ $67,200		$100,900,000
Development and production equipment:		
For all wells (1,500) @ $6,600 each	$9,900,000	
For air lift wells (675) @ $30,000 each	20,250,000	30,150,000
Drilling cost for 183 estimated dry holes @ $56,127		10,321,241
Drilling and development costs for 217 wells pulled and plugged at $75,000 each		16,275,000
Total development cost for 1,900 borings on 33,760 acres		$157,646,241
Estimated cost of leases in Greater Seminole area, including litigation and miscellaneous expenses		$25,320,000
Tankage—120 55,000-bbl. tanks @ $0.40 per bbl.		2,440,000
83 80,000-bbl. tanks @ $0.33 per bbl.		2,213,334
Estimated privately owned pipe lines, loading racks and railroad sidings		720,000
Lifting costs on 339,141,600 bbls. of oil @ $0.20		67,828,320
Total estimated cost to producers		$256,167,895

PROBABLE PRODUCTION AND REVENUE TO PRODUCERS FROM THE GREATER SEMINOLE OIL FIELDS UNDER HYPOTHETICAL PLAN

	Bbls.	Bbls.
Total production as of June 30, 1930 (using ratio established by W. C. Cutler formula 75.1338%)		339,141,600
Deductible items:		
Total royalty—12.5 per cent	42,396,700	
Oklahoma gross production tax—3 per cent	10,175,448	
Pipe line charge for B.s.—3 per cent	10,175,448	
Total deductible items		62,747,596
Net production to producer's account		276,394,004
Income to producers 276,394,004 bbls. @ $1.75 per bbl.		$483,688,507
Less cost of production		256,167,895
Estimated net income to producers		$227,520,612

In each of the above estimates the figures given in the United States Bureau of Mines R. I. No. 2,997 are used for cost of drilling, equipping wells, and dry holes.

Study of Figures

A study of these analyses of the actual and probable methods of developing Seminole area may be made from many viewpoints.

For the producer it will show that a net saving in development expenses would have amounted to:

Development costs, actual	$274,552,312
Development costs, probable	157,646,241
Difference	$116,906,071

and this amount at 5 per cent per year interest would have earned about $5,845,300.

If the market had not been overloaded with oil that it did not need and the prices reduced from $2.45 to $1.32 for 38° A.P.I. gravity crude there would have been a wider margin of profit between the cost and selling prices of the oil and upon the smaller investment this would have made a more favorable showing upon the statements at the end of each year.

The analysis shows that while 112,264,764 bbls. less of oil would have been produced under the unitization plan still the estimated net income to the producer would have been about $104,900,174 more.

It is quite likely that the landowner and the purchaser of royalty will say that this is all very well for the producer but deferred production retards returns on his investment and it is only natural that these groups should be more interested in immediate returns than in future possibilities.

The following comparisons should therefore be interesting:

54,425,795 bbls. of oil to royalty owner @ $1.42	$77,284,629
42,396,700 bbls. of oil to royalty owner @ $1.75	$74,194,225
Additional payment under plan followed	$ 3,090,404

These figures show that as the pools were produced the royalty owner did secure $3,090,404 more royalty than would have been secured if the oil had been produced under unitization but if this oil had been produced under the estimated increased price, or as deferred production, it would have been worth $3,815,313 to the royalty owner.

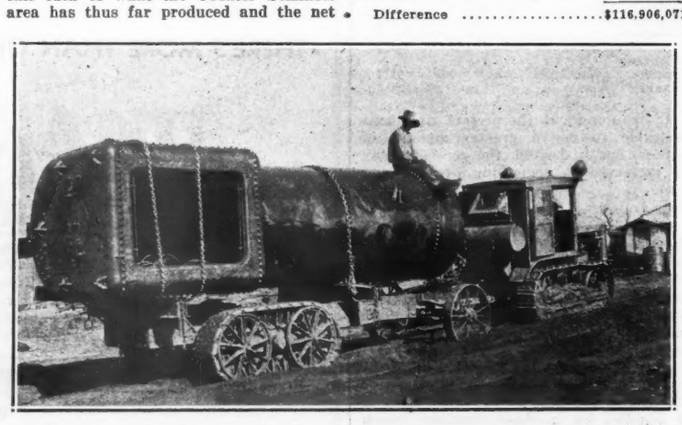
From this viewpoint the royalty owner has lost about $725,909 that can never be made up and this should be given consideration in pools still to be developed for the royalty owner is equally interested with the producer in all these problems.

Greatest Asset to Royalty Owner

The royalty owner would also gain under the unitization plan because of the increase in estimated values of his royalty interests as they would be larger in proportion to the amount of oil that was left in the ground and still to be produced.

The royalty on an oil lease may be compared with stock in an active industrial business where earnings past and future are the basis for the real value of the stock as computed from earnings.

If oil has been withdrawn and sold the initial amount available, which represents 100 per cent to the royalty owner, is depleted and the reserve is that much less. Therefore the actual value of his holdings in the lease are less than



Moving oil field boiler onto location under difficulties. Seminole district in 1927.

they would have been if the drilling and producing of the lease had been conducted under the unitization plan.

It might be said that he has already had part of this money but the above analysis shows that his actual returns were only about 4 per cent greater and the oil still to be produced will sell at a lower price than it would have brought had the market conditions been maintained at near their former levels.

In purchasing settled production it is the usual practice to base the value of the lease upon the amount of oil being produced and multiply this production by some figure that represents a fair value for this oil. This is expressed in terms of "dollars per barrel of production."

With hastened production the depletion curve drops off more rapidly than it would have dropped had the production been deferred. In this instance 112,264,764 bbls. more of oil have been withdrawn from approximately 33,760 acres than would have been produced under unitization, or about 3,000 bbls. per acre.

In plotting past production from a lease and extending the curve for future estimated production this would be taken into account and a reference to the production for the Seminole area per day during June, 1930, shows that it was producing about 240,819 bbls. under proration conditions.

Value of Royalty

If Wilcox sand production is worth $1,000 per barrel, this would place the value of Seminole acreage at about $240,819,000. This does not take into account the added production that would be available if the wells were permitted to flow to full capacity, but this proration condition has been brought about by overproduction under competitive conditions and is therefore chargeable to the conditions as they exist.

This production is at the rate of 6.2 bbls. per acre for the area. This means that the earnings upon the royalty are only about 0.8 of a barrel per acre so the value of royalty is lower than it would have been had the unitization plan been followed and the market stabilized.

The reserve oil that would have been left in the ground under unitized operations could be compared with money in the bank, or as unfilled orders to a corporation, and would represent future dividends to be paid. As this oil has been withdrawn the comparative bank balance is smaller and the future orders to be filled less, hence the value of the royalty is less.

As there is only a given amount of oil in any pool the unit value of the royalty is represented by this total reserve and if any of it is withdrawn and wasted or sold at low prices the effect upon the royalty is to lower its value. It is quite true that a lot of royalty has been bought upon the same basis as stock during the recent stock boom in Wall Street — that is regardless of its earning power and hoping someone can be found who will pay more for it than the present owner paid.

That may be a wonderful theory and so long as it works it is lovely, but the stock crash last fall showed that there is a point beyond which the public will no longer invest and in buying royalty the same rules will apply. The true value of royalty can be ascertained with a fair degree of certainty in any pool and beyond that value, which represents the ability of the investor to secure the return of his capital investment with a fair profit, the investor is simply gambling on the chance that he can find someone who is willing to pay him more for his holdings than he paid for them.

Unitization Benefit to All

There seems to be no doubt as to the benefits that would have accrued to the whole industry if conditions had been such that it would have been possible to have unitized Seminole area before drilling started, and not only Seminole but other areas of high potential production that were in or being brought in at about that time in 1926 when the Wilcox sand production of Seminole was discovered.

The industry is now making the best of a condition of overproduction and accumulation of vast amount of oil in storage in the pools of the world and has shown a united front in its endeavors to correct the evils of competitive drilling and the leaders are rapidly finding ways and means of curbing the flood of oil which at times threatens to again upset the price structure and bring about losses to all.

CALIFORNIA SCHEDULES ADVANCED AND REDUCED

(Continued from Page 140)

the independent refiners. Conditions today do not permit the advance in the price of refined products contemplated at the time of the advance in the price of crude oil referred to. It is apparent that the burden of maintaining the conservation of our crude oil resources cannot be thrown wholly on the producers. California producers who today are restricting their production to prevent waste are receiving some compensation for their reduced output in the shape of a higher price.

"If relief comes to the refiners entirely at the expense of the producer the present conservation of California oils would be placed in jeopardy. If relief is not afforded to refiners from their present difficulty some who control shut-in production will undoubtedly discontinue their purchase of crude oil and open up their own production, thus destroying the conservation program, for the conservation program requires for its successful operation that its burdens be shared by all operators in any field and that a market be provided for such oil as is produced. The public as well as the industry is interested in the conservation of our petroleum resources.

"The burden of conservation should not be thrown wholly on the public nor on the refiner nor on the producer. The theory of conservation is that our natural resources shall be utilized only to the extent of a reasonable demand. The result will be a stabilized value and price over a long period of years rather than low prices during the periods of excessive production with high prices when the time of shortage arrives. As President Coolidge pointed out in his letter to the Federal Oil Conservation Board on December, 19, 1924: 'Overproduction in itself encourages cheapness, which in turn leads to wastefulness and disregard of essential values.'"

SIMPLE PROBLEMS IN PLANT OPERATION

(Continued from Page 139)

value of K by interpolation, which is as following:

From the table we find the value of K for a weir 2 feet long and with a head of .70 foot to equal .598 and for a weir 2 feet long with a head of .80 (K) = .595, and:

K = .598 for length 2 ft. and head of .70 ft.

K = .595 for length 2 ft. and head of .80 ft.

.0030 ÷ 2 = .0015

K = .598 — .0015 for length of 2 feet and head of .75 foot

K = .5965

Substituting the formula becomes:

$$5.347 \times .5965 \times 2\sqrt{.75^3} = 4.14 \text{ cubic feet per second}$$

Discharge Per Second

Example 2:

What is the discharge per second from a weir 4 feet 3½ inches long with end contractions and a velocity of approach of .7 foot per second, if the head is 9 $\frac{7}{16}$ inches?

Solution—Apply formula (1).

4 feet 3½ inches = 4.2917 feet the length of the weir

9 $\frac{7}{16}$ inches = .7656 foot the measured head, or (H)

The formula for the effective head is given in the note below the table (H + 1.4h).

The head equivalent to the velocity with which the water approaches the weir, or (h) $= \frac{V^2}{2g} = \frac{.49}{64.32} = .0076H +$

1.4h = .7658 + 1.4 × .0076 = .7762 foot.

Find the value of K for a length of 4.2917 feet and an effective head of .7762 foot. Values are given for lengths of 3 feet and 5 feet and for heads of .70 and .80 foot. First find the value of K for a head of .70 foot and a length of 4.2917 feet. This evidently lies between the values given in the table for a head of .70 foot and lengths of 3 feet and 5 feet.

K = .606 for length 5 ft. and head of .70 ft.

K = .603 for length 3 ft. and head of .70 ft.

.003 ÷ 2 = .0015 increase in K for an increase of 1 foot in L

The increase for 4.2917 feet — 3 feet or 1.2917 feet is:

1.2917 × .0015 = .00194

K = .603 + .00194 = .60494 or .6049 to four decimal places

K = .6049 for length of 4.2917 feet and head of .70 foot

The next step is to find the value of K for a length of 4.2917 feet and a head of .80 foot. This work may be set down as follows:

4.2917 feet — 3 feet = 1.2917 feet

.604 — .600 = .004 ÷ 2 = .002

.002 × 1.2917 = .0026

.600 + .0026 = .6026

K = .6026 for length of 4.2917 feet and head of .80 foot

It is necessary now to find the value of K for a length of 4.2917 feet and a head of .7762 foot. This value of K must lie between .6026 and .6049, since the head we are considering lies between .70 foot and .80 foot. The difference between these two values of K is .0023, and this is for a difference in head of .80 foot — .70 foot = 1 foot. The increase in head to be considered is .7762 foot less .0762 foot which is $\frac{.0762}{1}$ of .1 foot, therefore the difference between the coefficient for .70 foot, and .7762 must be $\frac{.0762}{1}$ times the difference for a change of .1 foot.

$$.0023 \times \frac{.0762}{1} = .000175$$

.000175 is the difference between the coefficient for .70 foot and .7762 foot, and since the table shows that there is a decrease in the coefficient for an increase in head, subtract this difference from the coefficient for .70 foot:

.604900 — .000175 = .604725 or .6047 to four decimal places

K = .6047 for a length of 4.2917 feet and head of .7762 foot

Substitute in formula (1):

$$5.347 \times .6047 \times 4.2917 \sqrt{.7762^3} = 9.484 \text{ cubic feet per second}$$

COEFFICIENTS FOR WEIRS WITH END CONTRACTIONS

Effective head (ft.)	Length of weir, in feet						
	.66	1	2	3	5	10	19
.1	.632	.639	.646	.652	.653	.655	.656
.15	.619	.625	.634	.638	.640	.641	.642
.20	.611	.618	.626	.630	.631	.633	.634
.25	.605	.612	.621	.624	.626	.628	.629
.30	.601	.608	.616	.619	.621	.624	.626
.40	.595	.601	.609	.613	.615	.618	.620
.50	.590	.596	.605	.608	.611	.615	.617
.60	.587	.593	.601	.605	.608	.612	.615
.70	...	.590	.598	.603	.606	.612	.614
.80	...	...	.595	.600	.604	.611	.613
.90	...	...	.592	.598	.603	.609	.612
1.00	...	...	.590	.595	.601	.608	.611
1.2	...	...	.585	.591	.597	.605	.610
1.4	...	...	.580	.587	.594	.602	.609
1.6	...	...	...	.582	.591	.600	.607

Note—The head given is the effective head (H plus 1.4h). When the velocity of approach is small, h is neglected.

SINCLAIR TO ENLARGE REFINERY AT HOUSTON

HOUSTON, Tex., Sept. 15. — Tentative plans for a further expansion and construction program at the Houston plant of the Sinclair Refining Co. have been made known here. It is reported from the New York office that more than $1,500,000 will be spent in additional equipment and facilities, work to begin within the next month and continue through the winter.

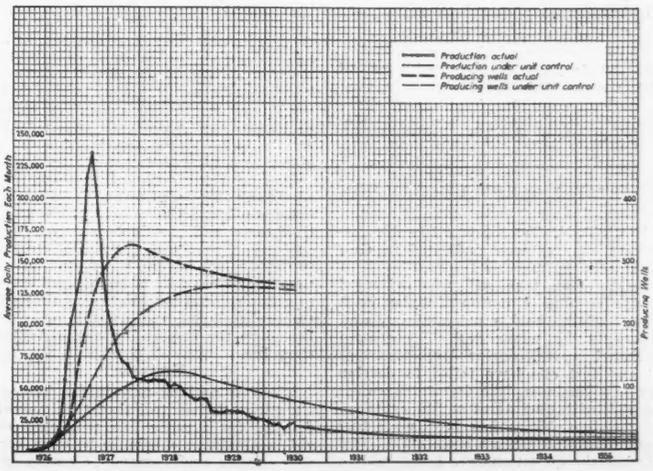
Proposed construction will include two more cracking units, a 20,000,000-foot gas recovery plant, the immediate erection of six 80,000-bbl. steel storage tanks for gasoline and six other similar tanks for crude. Additional plans have not been made known definitely but other work probably will include general building and enlargements.

This augments a construction program which has been going on at the Houston refinery for over a year, during which a considerable amount of new equipment has been added and the capacity of the plant greatly increased. It is understood the company contemplates the concentration of refining facilities at Houston following the recent acquisition of the Pierce Petroleum Corp. holdings, whose added marketing business will necessitate an expansion of Sinclair's refining capacity.

The Houston construction will be under the direct supervision of Parker Kendall, general manager and superintendent of the plant.

BIG HORN REFINERY COMPLETED

BILLINGS, Mont., Sept. 15.—The Big Horn Oil & Refining Co. has practically completed the construction of its new topping plant here and will begin its operation within the next week. The refinery will run approximately 500 bbls. of Pedro and Osage crudes per day, the crude being produced locally. The lubricating oil plant will not be ready for operation for about two months.



—By J. O. Lewis in Mid-Continent Oil and Gas Association Handbook.

Seminole City Pool production chart. Showing comparison with results obtainable under unit development.

PROGRESS IN RESEARCH WORK ON CONDENSATION

(Continued from Page 139)

In Column 4 of table below, the details of a short run (80 minutes) on butane are given, which was stopped at the maximum pressure attained during the longer (510-minute) run. This experiment was performed to find out whether or not unsaturates are formed during reaction. The detailed runs are partially shown here:

Gas Used—	CH_4	C_2H_6	C_3H_8	C_4H_{10}	C_4H_{10}	C_2H_4
Initial volume (cc.)	232	229	228	231	231	222
Initial pressure (mm. Hg.)	759	754	753	762	756	744
Time of run (Min.)	510	480	510	80	510	400
Reaction volume (cc.)	238	238	238	238	238	234
Final pressure (mm. Hg.)	759	754	787	873	808	215
Final H_2 (cc.)	143	147	143	65	148	47
CH_4	64	43	36	41	37	8
C_2H_2	...	...	...	1	...	...
C_2H_4	...	...	...	5	...	...
C_2H_6	13	28	42	14	38	3
C_3H_8	5	4	16	13	10	1
C_4H_{10}	2	4	2	127	14	2
C_5H_{12}	3	...	2	...	3	...
Final gases (cc.)	233	226	242	264	247	60

Discussion of Results

The saturated hydrocarbons all show the same general pressure change as the reaction proceeds in time. They all show a maximum pressure one to two hours after the beginning of the reaction. Especially remarkable is the decrease of pressure during the later stages of the reaction. The one unsaturated hydrocarbon tried (thylene) shows a decrease in pressure to about one-third of the initial pressure.

The results of these experiments agreed with finding when subjecting the respective gases to alpha rays and the authors summarize their findings by the statement that it is believed that a common agency acts to bring about condensation. The basis of this assumption has been outlined briefly by the fact that in each case there is an agreement in (1) The pressure changes as a function of the time. (2) The free hydrogen produced during the reaction. (3) The relative amount of hydrogen and methane in the hydrogen-methane fraction of the resultant gases. (4) The percentage of liquid conversion. (5)The average composition of liquid condensate. (6) the percentage of the hydrocarbons reacted.

MR. TEAGLE RETURNS FROM EUROPEAN TRIP

NEW YORK, Sept. 16.—World depression in the petroleum industry will not be overcome until domestic markets in this country are stabilized, said Walter C. Teagle, president of Standard Oil Co. (New Jersey), on his return this week from a business trip to Europe. Mr. Teagle again denied that he had sought control of the Spanish Oil Monopoly either for his own company or the American Export Association and stated that if his company contemplated any extensive expenditure in a new enterprise it would be done in the United States.

Questioned regarding the strong position of Standard Oil Co. (New Jersey) in the face of current depression in the oil industry, Mr. Teagle attributed the company's success in a large measure to its development of the production and sale of by-products.

SWANSON NOW CHIEF PETROLEUM ECONOMIST

The appointment of E. B. Swanson as chief economist of the Division of Petroleum Economics of the United States Bureau of Mines, is announced by Scott Turner, director of the bureau. Mr. Swanson has been serving as acting chief of the division since October, 1928. He is a graduate of the University of Washington and did graduate work in economics at the Robert Brookings Graduate School in Washington, D. C. Other recent personnel changes in the Petroleum Economics Division of the bureau include the promotion of G. R. Hopkins from associate pertoleum economist to economic analyst and A. H. Redfield from assistant scientist to associate economic analyst.

The Petroleum Economics Division was established as a unit in the Economics Branch of the Bureau of Mines on January 1, 1926, at which time H. H. Hill, chief engineer of the petroleum and natural gas division of the Technologic Branch, was designated to serve as chief of the Petroleum Economics Division during its formative period.

Future work of the Petroleum Economics Division will include additional studies of the distribution and utilization of petroleum products, according to C. P. White, chief of the economics branch of the bureau. The appointment of additional personnel to conduct these new studies is anticipated. Mr. White stated that a number of problems related to distribution and utilization are under consideration and that final selection and appointment of additional personnel may be expected within a short time.

FRED F. SMITH DIES

Fred F. Smith, assistant director of sales, explosives department, Hercules Powder Co., died September 6, as the result of a heart attack after an illness of several days. He was 48 years old. Born in El Dorado, Kans., Mr. Smith spent his early career in Kansas and Missouri. In 1908 he left the employ of the Missouri Pacific Railroad to become traffic manager of the Independent Powder Co. at Joplin, Mo. In a short time he became assistant sales manager of this company, and in March, 1914, when the Independent Powder Co. was acquired by the Hercules Powder Co. he came to Wilmington, Del.

DEATH OF W. C. HOGG

A cablegram announces the death in a hospital at Baden Baden, Germany, of William C. Hogg, lawyer and oil operator, of Houston, Tex. He was taking a cure when an operation for the removal of gall stones became necessary. He rallied at first, but a fatal relapse followed. Mr. Hogg was a son of the late Governor Hogg. Most of Mr. Hogg's fortune came from the oil produced on the family homestead in Texas, in the heart of the Columbia oil field.

P. M. MISKELL RETURNS

P. M. Miskell, manager of the refining and marketing departments of the Empire Oil & Refining Co., and Mrs. Miskell, returned last week to Tulsa after spending several weeks abroad.

Their itinerary included a week in Ireland, 10 days in England and Scotland with the remainder of the time in Continental countries. Mr. Miskell visited the foreign offices of the Cities Service interests with which the Empire company is affiliated.

COASTAL MARKET UNCHANGED

HOUSTON, Tex., Sept. 16.—No important changes were indicated in Gulf Coast refinery markets the past week. A generally firm tone still was evidenced in the gasoline situation Tuesday with sellers able to hold a price minimum of 7¼ cents for motor fuel. The general market, however, continued inactive. Gas oil and fuel oils have failed to develop any new business. The former continues sluggish with quotations at 3¾ cents going untaken. There has been no actual weakening of the price structure of fuel oils but the quotations are being held in face of an inactive movement.

Pale and red oils are only fair in movement and are marking time.

Late Fields

(Continued from Page 48)

an hour from chat at 2,953-58 feet. When it was first drilled into the chat at 2,953-54 feet, oil rose in the hole immediately. It was later drilled deeper and increased its flow to 25 bbls. an hour. The new well is an important extension to the pool and proves up considerable acreage between it and other production. The pool now extends approximately 2 miles north and south. Production at the new well may mean the entry of another pipe line outlet into the area which is served by four other companies, Derby Refining Co., Golden Rule Refining Co., Vickers Refining Co., and Prairie Pipe Line Co. The National Refining Co. operates a refinery at Coffeyville and oil may be piped to that refinery.

Roth & Farout's No. 1 Brandt, Section 12-32-4, Cowley County, was flowing at the rate of 21 bbls. an hour against a back pressure of 160 pounds. Additional tankage is being erected but considerable oil has gone into the slush pit. Same operators announced a location for the south offset, No. 3 Holt, NW cor. SE. Section 12-32-4.

Midwest Exploration Co.'s No. 36 Richardson, SE cor., Section 36-22-12w, a wildcat in Stafford County, swabbed 94 bbls. the first four hours. The next 10 hours it swabbed 95 bbls. Some estimate the well to be a 150-bbl. producer. A production test is to be made in this formation before it is drilled deeper.

ALL GRADES OF GASOLINE ADVANCED BY REFINERS

(Continued from Page 36)

strong market position over the past few months.

If posted crude oil prices continue at their present levels, it is reasonable to conclude that refiners will make further reductions in their crude oil runs to stills. At the same time, cracking units should continue to operate at capacity. This will further restrict the quantity of furnace oil cuts available and is the basis for the predictions of those who feel that a stronger market is in prospect for the fall and winter months.

Gasoline and Naphtha

Contradictory statements are heard within the trade as to the gasoline market. Some buyers have refused to take the recent advances seriously and it is claimed that concessions have been obtainable from a few refiners over the past few days. These reports are usually strongly denied with the statement that any cheap material is coming from resellers who made favorable purchases late in August for September delivery and are now in a position to undersell the general market.

Refiners who are not active in the spot market report a satisfactory contract movement, the orders being especially heavy over the past few days. The few spot sales of the higher gravity gasolines are being made over such wide range of prices that it is difficult to determine what the market situation is. Several sellers offer exceptional antiknock qualities in their high gravity grades and secure premium prices. Others are apparently willing to sell a 60-62, 400 to 420 endpoint grade at a U. S. Motor price.

Due to reports regarding competitive conditions in foreign markets, predictions are again heard that posted prices at the Gulf Coast will shortly be reduced. With spot export purchases practically confined to independent buyers, a reduction at this time would be of little importance except to a few refiners who have long-time contracts based on the coastal prices as posted by the Export Petroleum Association, Inc.

Kerosene

There is nothing new in the kerosene situation. Sellers feel that the improved demand for furnace oils will gradually aid in obtaining a balance between kerosene supply and demand. Cheaper material is available from North Texas refiners, but Oklahoma refiners continue to quote a low of 3¼ cents for specification 41-43 water white material. The higher gravities are unchanged.

Fuel and Furnace Oil

The situation in regard to fuels has been explained. The low cold test, low flash gas oil of 32 to 36 gravity suitable for furnace oil is premium product in Oklahoma with 2⅝ to 2¾ cents the going market. The higher gravities were also scarce. One buyer reported that a 38-40 straw distillate of low cold test and a flash under 185° F. was practically unobtainable for immediate delivery in Oklahoma. This product was generally quoted at a low of 3 cents with high cold test grades one-fourth cent less.

Fuel oil of low cold test and viscosity under 50 cents a barrel is increasingly hard to find regardless of gravity. The higher gravities are also not so freely offered. A substantial sale of 28-30 fuel oil at 80 cents was reported last week.

Lubricants and Wax

Refiners of lubricants and wax in Oklahoma repport "no change" in prices.

Natural Gasoline

A price of 5¾ cents for all grades of natural gasoline was established on Monday after several manufacturers had advanced to that level the latter part of last week. The demand is taking care of the available supply from week to week and no weakness has been reported in any grade.

TO CLOSE CHICAGO OFFICE

CHICAGO, Sept. 13.—Effective September 30, the local offices of the Mid-Kansas Oil & Gas Co. will be closed. The Mid-Kansas company recently took over the Transcontinental Oil Co. properties and has decided to discontinue the local tank car sales office. It is understood that the Ohio Oil Co., of which the Mid-Kansas is a subsidiary, expects to enlarge its company market outlets to take care of large quantities of gasoline from Mid-Kansas refineries. All sales for this territory will be handled from the Tulsa headquarters.

George Williams is manager of the local office and Chris Hauser, assistant manager.

ON PUMPING EQUIPMENT

The following were appointed on the Mid-Continent committee of the American Petroleum Institute committee on pumping equipment: L. A. Ogden, of the Empire Gas & Fuel Co., Bartlesville, chairman; E. F. Guidinger, Phillips Petroleum Co., Bartlesville; Charles L. Shirley, Shell Petroleum Corp., Tulsa; C. D. Miller, Barnsdall Oil Co., Tulsa; K. A. Covell, Indian Territory Illuminating Oil Co., Bartlesville; F. B. Hall, Tidal Oil Co., Tulsa; Harold Decker, Skelly Oil Co., Tulsa, and H. D. Collins, Gypsy Oil Co., Tulsa.

MOVE CONTINENTAL OFFICES

The Continental Oil Co. has moved its Fort Worth, Tex., offices to the new Fair Building. The accounting department of the Texon Oil & Land Co. (Group No. 1 Oil Corp.) was moved to Fort Worth from the field at Santa Rita some few weeks ago and will have offices with the Continental Oil Co. in the Fair Building. The Group No. 1 Oil Corp. is a subsidiary of the Continental Oil Co.

T. P. OFFICES BURNED

The general offices of the Texas Pacific Coal & Oil Co. at Thurber, Tex., were destroyed by fire September 14, causing a loss estimated to be $250,000. Edgar J. Marston, president of the company, said temporary offices would be immediately established in another building until a new office building can be erected.

J. T. TIERNEY DIES

J. T. Tierney, age 51, employe of the Continental Supply Co., and formerly of the Atlas Supply Co., died September 13 at his home in Muskogee, Okla. Mr. Tierney was widely known among the oil fraternity in the Mid-Continent Field.

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D

Of Interest to Sales Departments

All States Should Adopt Same Report For Gasoline Taxes

All states should have a uniform form with which refiners, wholesalers and distributors can make their reports for gasoline tax payments, according to Lloyd S. Persun of the Pennsylvania Motor Vehicle Department. The report would greatly simplify the work of the oil companies and the several states and aid in preventing gasoline tax evasions. The plan is said to have the support of several of the large oil companies which market in several states.

Need of Change

Mr. Persun in a prepared statement said:

"At the present time, the requirements of each state are so different in detail that much added work and constant annoyance accrue to the industry. This always leads to confusion and misunderstanding of motives by one side or the other. The obligation imposed on the industry is not a light one and we will all agree that the major companies are only too glad to co-operate with the states in the collection of the motor fuel tax, but the difficulty the states are coping with on interstate shipments of motor fuels is caused by the sales methods of a few independent distributors and brokers who ship or deliver motor fuels at cut rates. It is to curb the tax-dodging activities of these few, whose delinquencies incidentally run to immense totals, that we must have the co-operation of those companies realizing their responsibilities. It will help the states, but it will help the industry immeasurably more.

"This conference is divided into nine groups and I would suggest to the president that a committee of nine be appointed for the purpose of drafting a uniform report form, each member of the committee to detail the requirements of such a form for his particular group and the committee to merge the nine suggested reports into one model form. It should be incumbent on the committee, in drafting this form, to consult the industry wherever possible and necessary. The most practical solution will develop to the satisfaction of all concerned.

Reports Not Complete

"Suppose such a uniform report form were in effect at the present time and each state could receive from the industry complete sales reports on interstate shipments. The chain would be completed by the exchange of data by the states. At the present time, I believe each state is enjoying every co-operation from its sister states but as the data available on interstate shipments are meager, satisfactory reports are not obtained.

"Lastly, the states should have their acts amended, making it the duty of every resident, agent or employe of every common carrier or person delivering motor fuels into the state to report forthwith every such delivery in writing to the state, giving the names and addresses of the consignor and the consignee, the date and place of delivery and the number of gallons so delivered, also any other information the tax officers may deem necessary. I believe that such an amendment would not in any way conflict with the interstate commerce laws, rules and regulations which provide that—unauthorized disclosure of information as to interstate shipments is unlawful—in which there is an exception providing that nothing in such laws, rules and regulations shall prevent giving information to any officer of the United States Government, or any state or territory of the United States in the exercise of such officer's duties."

TOURIST TRAVEL SWELLS MOTOR FUEL CONSUMPTION IN CANADA

Gasoline production at Canadian refineries during 1929 reached a total of 12,474,875 bbls., an increase of 2,642,593 bbls., or 27 per cent over the 9,832,282 bbls. produced during 1928, according to the annual bulletin on the Canadian petroleum industry last issued by the Dominion Bureau of Statistics. Of the 1929 total, 3,789,906 bbls., or 30.38 per cent, resulted from cracking operations and 8,684,969 bbls. or 69.62 per cent, represented the output of straight-run gasoline. During the year, 1,066,812 bbls. of crude produced in Canada and 29,585,431 bbls. of imported crude were put through the refineries, while 10,041,043 bbls. of fuel oil were rerun in cracking equipment.

During 1928, 3,347,873 bbls. of gasoline were produced by cracking, representing 34.05 per cent of the annual output, and 6,484,409 bbls., or 65.95 per cent, resulted from straightrun operations. During 1928, 580,709 bbls. of domestic crude and 23,703,113 bbls. of imported crude were refined and 8,128,882 bbls. of fuel oil were cracked. Throughput of domestic and foreign crude during 1929, consequently, was 26.22 per cent larger than in 1928. Imports of gasoline, including natural gasoline used in blending at plants, increased from 4,104,375 bbls. in 1928 to 5,004,331 bbls. in 1929, or 21.93 per cent.

The apparent consumption of gasoline in Canada during 1929 amounted to 17,340,990 bbls., an increase of 3,518,166 bbls., or 25.45 per cent over the apparent consumption of 13,822,824 bbls. indicated for 1928. Actual consumption of motor fuel, as indicated by provincial gasoline taxes, amounted to 17,177,864 bbls., divided as follows:

Canadian Gasoline Consumption by Provinces, 1929

Province—	Bbls.
Prince Edward Island	70,805
Nova Scotia	493,857
New Brunswick	299,134
Quebec	2,201,549
Ontario	8,348,329
Manitoba	993,292
Saskatchewan	2,241,621
Alberta	1,434,529
British Columbia	1,094,748
Total	17,177,864

A portion of the increase in motor fuel consumption during 1929 may be attributed to the increased number of automobiles owned and operated in Canada, the number of motor vehicles registered increasing from 1,076,819 in 1928 to 1,195,594 in 1929, an increase of 11 per cent. Registrations during 1929 were divided among the provinces, as follows: Prince Edward Island, 6,141; Nova Scotia, 40,014; New Brunswick, 31,852; Quebec, 169,547; Ontario, 542,771; Manitoba, 77,840; Saskatchewan, 130,229; Alberta, 99,650, and British Columbia 95,647. A small number, not included, is registered in the Yukon territory.

Tourist Traffic

The second and equally important reason for increasing motor fuel consumption in Canada lies in the automobile tourist traffic, nearly four times as many automobiles having entered Canada during 1929 as were registered within the country. The number of automobiles reported entering Canada during 1929 totaled 4,508,809, an increase of 863,354, or 23.68 per cent over the 3,645,455 reported for 1928. Canadian cars leaving the country for tours amounted to 619,572 in 1929, as compared with 519,871 in 1928.

The majority of automobiles entering Canada remained less than 24 hours and the majority of them entered the Province of Ontario.

Automobiles Entering Canada, 1929

Length of stay—	Number 1928	Number 1929
Not exceeding 24 hrs. ..	2,698,737	3,416,588
Not exceeding 60 days .	945,545	1,091,014
Not exceeding 6 mos. .	1,173	1,207
Total	3,645,455	4,508,809

Nearly 78 per cent of the automobiles entering Canada during 1929 registered at customs offices in Ontario, as compared with 76 per cent in 1928. The number of tourist cars entering a province is not an exact gauge of the number of such cars operating on the highways of that province; nor does it necessarily indicate that gasoline sales within the province will be in proportion to the number of cars entering. This is indicated by the fact that gasoline sales in Ontario during 1929 were, in relation to national totals, more nearly in line with automobile registrations than with the number of foreign cars entered.

Ontario has registered 45.4 per cent of all the motor vehicles in Canada and sold 48.6 per cent of all the motor fuel reported during 1929. In as much as 76 per cent of the cars entering Canada during 1929 remained in the country less than 24 hours, the gasoline consumption of this group probably added but little to the Canadian demand for gasoline. The fact, however, that those remaining more than 24 hours numbered 1,092,221, or nearly as many as were registered in Canada during the year, is of importance in connection with the consumption of gasoline. It is stated, also, by the Dominion Bureau of Statistics that the gross value of automobile tourist traffic to Canada for 1929 is estimated at $208,744,000, as compared with $183,576,000 for 1928.

Tax Collections

Taxes collected from the sale of gasoline amounted to $18,760,543 in 1929, as compared with $12,400,453 in 1928, an increase of $6,360,090. The tax was 5 cents a gallon in all provinces except Manitoba, Saskatchewan and British Columbia, where the tax was 3 cents a gallon. Ontario and Alberta increased the rate from 3 to 5 cents per gallon on March 28 and June 1, respectively. Ontario and Alberta, with increased rates, showed increases over 1928 tax receipts of 84 per cent and 75 per cent, respectively, but, with the same rate as in 1928, New Brunswick almost doubled the gasoline tax revenue and Prince Edward Island showed an increase of 39 per cent, Nova Scotia and Quebec increases of 27

(Continued on Page 160)

PETROLEUM REFINERIES IN CANADA, 1929

Name and location of plant—	Rated daily capacity (bbls.)
Imperial Oil Refineries, Ltd., Imperoyal, Nova Scotia	10,000
Imperial Oil Refineries, Ltd., Montreal, Province of Quebec	17,000
McColl-Frontenac Oil Co., Ltd., Montreal, Province of Quebec	3,500
The British-American Oil Refineries, Ltd., Toronto, Ontario	5,000
Canadian Oil Refineries, Ltd., Petrolia, Ontario	1,500
Imperial Oil Refineries, Ltd., Sarnia, Ontario	22,000
McColl Brothers, Ltd., Toronto, Ontario	3,500
North Star Oil, Ltd., St. Boniface, Manitoba	600
Imperial Oil Refineries, Ltd., Regina, Saskatchewan	7,000
Associated Refineries, Ltd., Wainwright, Alberta	300
Imperial Oil Refineries, Ltd., Calgary, Alberta	6,000
The Maple Leaf Oil & Refining Co., Ltd., Coutts, Alberta	5,000
Regal Oil & Refining Co., Ltd., Calgary, Alberta	2,000
Imperial Oil Refineries, Ltd., Ioco, British Columbia	14,000
Vancouver Oil Co., Ltd., Vancouver, British Columbia	4,000

Pure Oil Expansion Reflects Trend in Shipments by Water

By W. A. Gilman
Pure Oil Co.*

The Pure Oil navy is constantly expanding. Eleven years ago it consisted of but three barges, which came with purchase of the old Pure Oil Co., and which were used in transporting refined products from Marcus Hook to Kearny and around New York Harbor, and also a little gasoline stern wheeler, which was operated on the Kentucky rivers by the old Moore Oil Refining division, pushing a barge load of drums for customers isolated from the railroad.

The next development was the purchase about eight years ago of three 10,000-ton tankers to handle crude and refined products in the Atlantic Coast trade, at that time hauling much crude from the California fields by way of the Panama Canal. With the development of the Smiths Bluff refinery, from 1923 on, and due to this refinery's constant enlargement, another considerable fleet of tankers and barges has developed through a Pure Oil subsidiary to handle the company's growing trade to its numerous terminals along the Gulf and Atlantic Coasts.

In addition to these in more recent years the company has along the coast

*From Pure Oil News.

(Continued on Page 160)

FORM ASSOCIATION

The American Oil Trades Equipment Association, Inc., has been formed by companies and individuals whose business consists principally of supplying equipment to the oil trades, including the oil burner, gasoline and allied industries, it was announced yesterday. The purpose, the announcement said, is to promote among the members and in the oil trades equipment generally a high standard of trade ethics and good will. The association will provide facilities for the interchange of credit information.

Officers of the association are: Thomas F. X. O'Connell, National Tank Co., president; J. P. Van Overmeer, Petrometer Corp., vice president, and P. J. Fitzpatrick, secretary-treasurer. In addition to these, the directors include J. F. Renick of Renick & Mahoney, Inc., and C. H. Meister of the Preferred Utilities Manufacturing Corp. A. G. Kraus is general counsel.

PROPOSE GASOLINE LINE

WASHINGTON, D. C., Sept. 15.—A reported plan to carry imported gasoline by pipe line, a distance of about 27 miles, from the Chesapeake Bay to Fredericksburg, Va., will be of special interest to those who are watching the development of the import gasoline trade.

It is reported that Richmond, Va., bankers are interested in this project. The plan is to reach by pipe line the eastern terminus of a small railroad running from Fredericksburg to Orange, Va., and to distribute the gasoline over this area by railroad. So far as is known this is the first suggestion for carrying foreign gasoline inland by pipe line by a small company formed for that purpose.

NEW TERMINAL AT MOBILE

The Standard Oil Co. of Louisiana has announced plans for the construction of a large water terminal at Mobile, Ala. The plans became known at a rate hearing before the Alabama Public Service Commission last week. The Standard company plans to have the station in operation by next summer.

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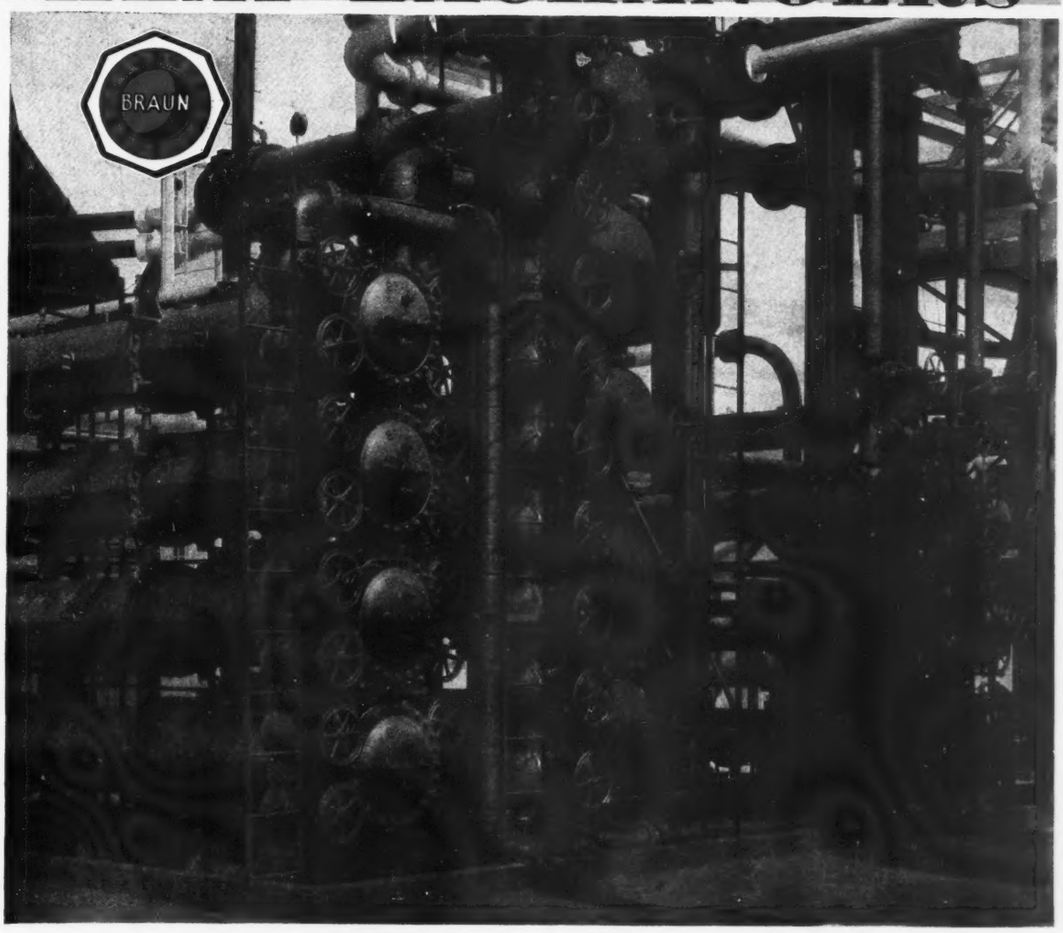

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Field Problems and Their Solution

EDITED BY THOMAS F. SMILEY

In order that men connected with the drilling, producing and transporting branches of the petroleum industry may procure quickly a solution of many problems confronting them from time to time in their work, The Oil and Gas Journal has arranged with leading engineers and other recognized authorities to answer questions submitted by readers of this publication pertaining to the work of drilling and producing crude oil and transporting this product.

Everyone is invited to submit questions freely. These questions will be submitted to proper authorities by Mr. Smiley, who edits the page, and answers, based on the best available information, will be published. Each question should give as much detail as possible, especially where it relates to matters where depths of sands, types of sands and operations on adjoining properties would have a bearing on the problem involved. The source of all questions will be considered as confidential and will be considered as confidential and nection with the question.

In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or practices which are improvements.

In case an immediate answer is important, one will be given by mail if the writer requests it.

GAS LIFT AND EMULSIONS

Does the gas lift method of producing wells increase the danger of emulsions? In this region we have a good deal of trouble with emulsions even when the wells are on the pump. Would it be likely to be worse if the same wells were put on the gas lift?—T. E. S.

In answering this question consideration will first be given to defining emulsions. Uren in his book on "Petroleum Production Engineering" states that "water may be present in association with oil either in the 'free' state, or 'emulsified'. The former term is relative and has no exact significance, being applied to the water which separates from the oil by mere gravity settling, assisted by moderate application of heat to reduce the viscosity of the oil. When emulsified, the oil and water are so intimately associated that the influence of gravity becomes negligible, even at temperatures considerably above normal; the mixture assumes colloidal properties and the water remains in permanent or semipermanent suspension."

Investigators do not seem to agree upon the percentage of water that is necessary to form true emulsions, but it seems that the majority of emulsions contain more than 25 per cent water and may have as much as 75 per cent of that fluid in the mixture.

Field experience has shown that oil will emulsify only when three elements are in proper proportion for the particular grade and type of oil being produced. These elements are oil, water and gas or air, and it has been noted that by changing the proportion of one of these elements with relation to the other two emulsions may be reduced or increased in amount depending upon the character of the oil and water.

Uren does state that one of the important disadvantages of air lift is its tendency to form emulsions, if water is present.

Robert Stirling in his "Gas Air-Lift Pocket Book" states that emulsions formed when small proportions of water are present with the oil have caused trouble. Experience has proven that with the lighter oils up to 32° Be. gravity any emulsion that may be formed is easily separated, but with heavier oils (18° Be. gravity) emulsions which were difficult to break down, were formed when 5 per cent of water was present with the oil.

With 15 to 20 per cent water there was no trouble, and in that case the trouble was overcome by running 20 per cent of water into the well to be raised with the oil.

This last idea suggests the possibility of reducing the amount of emulsion formed in your wells if it can now be determined what is the percentage of water to oil and then adding extra water and use the air lift. If the wells are large producers it is possible that the cost of lifting the oil may be reduced by installing the air lift equipment and in that case the handling of the additional fluid would be justified if it eliminated the cost of treating the emulsions.

It is suggested that you send sample of this emulsion as now being made in the pumping wells to a reliable laboratory for a full analysis and after that is secured it should be possible to determine whether air or gas agitation would tend to create more of this emulsified product and if so the suggestion offered by Mr. Stirling to add water might reduce the percentage of cut oil.

In view of the fact that the installation of compressor equipment to make this experiment at the well would be costly unless portable compressors are available we can only suggest that as much work as possible be done in the laboratory and well conditions be duplicated in this work to as great an extent as possible and from these data decision may be deducted that will decide whether it is wise to install permanent equipment to produce your wells by air lift.

FUNCTION OF HEADER GATES

Header gates are said to be used at pumping stations on pipe lines. What is a header gate, please, and what is the purpose of it?—E.S.R.

Header gates are valves installed on incoming and outgoing lines at such a distance from pumping stations as will protect the pumping station and other property on the pumping station site from drainage and incoming steams of oil should any failure or emergency occur on the station site. Pumping stations represent vast investments, which must be protected. The continuous operation of a pipe line system depends on the continuous operation of every relay pumping station. Without control over the incoming streams and the drainage from outgoing lines, a small fire at the pumping station might result in the total loss of such a station. These header gates are provided for such an emergency.

Header gates are usually located on incoming lines at a short distance. However, in some cases, at a convenient distance from the point where the lines enter the pumping station site. Also the header gates on the outgoing or discharge lines are located just before these lines leave the station site.

The header gates must be located at a safe distance from the other property on the station site. In case of a fire at a station, the header gates should be far enough away to close them in order to shut off drainage on any incoming streams. The valves must always be in such condition that they will close off drainage of any incoming streams. These valves are inspected from time to time for closing off drainage completely.

CRYSTALLIZATION OF RODS

Crystallization and fatigue are referred to quite often as being the cause of breakage of sucker rods. Do they mean the same thing? Can you tell me whether or not the oil and gas in a well have any effect on the rods? That is, aside from the work that the rods must do and which of course wears them out in time; do the oil and gas injure the rods in any way, actually shortening their life? I have heard it stated that this is the case. —E. D. N.

The term "crystallization" long has been applied to steel to describe an assumed condition existing within the metal at the time of failure. It is erroneous because steel is crystalline in nature at all times and if the size, character or arrangement of these crystals are to be changed heat much greater than that usually found under conditions of use would be necessary.

Sucker rods when examined after breakage show a crystalline structure and field men have been in the habit of considering such a condition as being the direct cause of the break, whereas laboratory tests seem to indicate that the break has really been occasioned by "fatigue" in the metal.

There are various conditions that set up this fatigue in the metal and in wells producing sulphur oils and hydrogen sulphide gas surface corrosion of the rods introduces areas of reduced cross section where failure follows under repeated loading and unloading of the rods.

This surface corrosion or etching may be very shallow but laboratory experiments have shown that every break starts at some such point in the surface of the metal and works inward until the section affected is so great the rods will part.

If rods are bent or kinked and then straightened, even though the work be done with great care, it has been found that some portion of the rod has been put under loading beyond its elastic limit and permanent rupture will follow later, starting at this place where the rod was first bent.

A great deal of laboratory work has been done on this problem and the results can be obtained from manufacturers of this type of equipment. It is also well to have the lease men follow the recommendations set forth in the American Petroleum Institute No. 7 poster on "Recommendations for Care and Use of Sucker Rods" which contains many valuable suggestions that will prove of practical use to the field men and result in longer life for this equipment if carefully followed.

WHY WAS IT CALLED THAT?

GAS-OIL RATIO

Back in 1922 R. Van A. Mills, now vice president and manager of Hudson's Bay Oil & Gas Co. and at that time a Bureau of Mines engineer, was making a study of the gas lift, and the recurrent need of a term to describe the proportion of gas to the oil produced by a well led him to coin the designation "gas-oil ratio." This refers to the number of feet of gas produced with each barrel of oil. It is determined by dividing the total number of feet of gas produced daily by the number of barrels of oil produced daily. Petroleum engineers generally recognized the convenience of the term and promptly adopted it.

SOLID ROCKS CAN FLOW

Is it a fact that solid rocks can flow? A statement that such is the case led me to search through the few books on geology that I have and I have found nothing to show that there is any foundation for the statement. If there is any truth in the statement will you please explain how it is possible for a solid rock to flow?—A. T. S.

It is an established fact that solid rocks can and do flow. Albert Heim in a work on the mechanics of mountain building, published in 1878, is believed to have been the first to make a clear statement with reference to this phenomenon. In the book mentioned, he says:

"In the intimate examination of many folded or squeezed strata, veins and open fractures are so rarely to be observed that we cannot possibly ascribe the deformation to that kind of displacement Even in the most brittle rocks we discover the most complete bends without a trace of fracture connected with them. In addition to the bends without breaks there are many other evidences that in general in connection with mountain building the molecules of rocks, even of the most brittle, may be displaced like those of plastic masses . . . Bending, stretching, thickening, rolling out and shearing are commonly related to one another. . . . Deformation without fracture is an effect of higher mechanical stresses than deformation with fracture."

C. R. Van Hise, in an exhaustive microscopic study of Pre-Cambrian rocks, acquired wide knowledge of rocks that had flowed and he not only confirmed the earlier statements of Heim, but he extended them to a great degree. His views, presented in "Principles of North American Pre-Cambrian Geology," have become the basis of the understanding of metamorphism among geologists and they are quoted widely. He introduced the terms "zone of flowage" and "mashing," which today are in general use.

C. K. Leith, in his "Structural Geology," and C. K. Leith and W. J. Mead, in their "Metamorphic Geology," offer further confirmation of the assertion made by Heim more than a half-Century ago.

Rocks, according to their own properties and the conditions of their environment, flow in four different ways, namely, mashing, melting, shear flow and pure shortening by recrystallization. Perhaps it will be sufficient for present purposes to define mashing only. If you should desire to delve into the subject more in detail this department will be glad to give you such references as may be needed.

"In the treatment of folding, cleavage and fissility it has been shown that layers are deformed by plastic flow, by fracture and by accommodation between them, as well as by rearrangement within the beds themselves," says Van Hise. "This deformation may be partly accomplished by rearrangement of the mineral particles with reference to one another. The process may go so far as to flatten the grains by flowage or to produce peripheral or entire granulation of the individual original grains. Not only may all the minerals and combinations of minerals thus be flattened by flowage or granulation, but the resultant layers or particles may be intermingled to some extent, and thus we may have laminated or foliated schists If the original rock was a conglomerate and the metamorphism is complete, each pebble makes a lamina of a different kind from those adjacent and thus give the rock a banded character."

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AXELSON OIL WELL PUMPS

PURE OIL EXTENDS SHIPMENTS BY WATER

(Continued from Page 156)

in Louisiana and Texas what is called its "Mosquito Fleet," quite a number of launches, barges, etc., used by the geological department in testing for oil in the bayous and swamps of that country. Large barges also are used to transport crude from the oil fields at Sweet Lake and Lost Lake to Smiths Bluff refinery. The company also has a couple of steam launches in Venezuela.

And now comes the latest development with the operation of two stern wheel tow boats and two barges on the Kanawha and Ohio Rivers, for the transportation of products from Cabin Creek refinery, to the numerous Pure Oil bulk distributing plants along these rivers. This river fleet consists of the boats "Tiolene" and "Pure Gyrol" and two barges, "Pure Cabin Creek" and "Pure Oil Barge No. 5," one of 40,000 gallons capacity and the second capable of carrying 100,000 gallons. This move will result in a great saving in freight rates, and will also be the means of increasing output along these two rivers.

River Fleet

This river fleet is known as the Pure Oil Barge Co. It first began operation in December, 1928, when the boat "Tiolene," which had been lying at Cincinnati for a number of years, was brought to Cabin Creek refinery, and was thoroughly reconditioned and equipped with a 100 horsepower Diesel engine. With it was obtained a wooden river barge, on which were placed four 10,000-gallon tanks, and these two vessels formed the nucleus of the new barge line. A large wooden float was also erected at the refinery from which to load the boats.

These boats were first used to transport gas oil from the refinery about 18 miles down the Kanawha River to the plant of the Carbide & Carbon Co., the boats at first returning light. In this way about 500,000 gallons a month of gas oil was handled. There was for a time considerable difficulty in handling the boats, especially when the river stage was too high or too low. Since that time the Government has co-operated very nicely in keeping the proper river stage in the operating wickets at the various dams.

After several months it was decided to bring back to the refinery from the Carbide plant return loads of Gyro gasoline, which was used in increasing the supply of Gyro at the refinery. However, in doing this another difficulty was encountered, as it was difficult to return the chutes with a heavy load just below the point where Elk River emptied into the Kanawha. This difficulty was also overcome by the co-operation of West Virginia Sand & Gravel Co. and the Ward Engineering Co., who with their own boats aided ours to navigate the chutes, while the "Tiolene" in turn reciprocated that favor.

It was shortly discovered that one boat could not handle all the traffic and so another tow boat was secured by purchase from the Ward Engineering Co. and rechristened the "Pure Gyrol." Another barge was also ordered built, this one all of steel and of 100,000 gallons capacity, which was delivered in July. With four boats, instead of two, it was decided to take another step, and this is to furnish deliveries to Pure Oil bulk plants along the two rivers, the Ohio and the Kanawha. Last fall unloading facilities were established at Charleston and since that time bulk deliveries have been made to that city.

Since unloading facilities have been built at Marietta, Ohio, at which point the "Pure Gyrol" delivered its first cargo on May 5. The third point to establish unloading facilities was Cincinnati, where the first cargo was delivered early in July. Unloading facilities will also be established soon at Huntington and Portsmouth.

The new barge "Pure Cabin Creek" has a capacity of 100,000 gallons, divided into six compartments with two additional end compartments at the collision bulkheads. It is 125 feet in length by 26 feet beam. It has a loaded draft of 4½ feet. It is equipped with a gasoline engine driven pump capable of discharging the cargo at a rate of 200 gallons per minute. This barge was designed by the Pure Oil engineering department at Chicago and built from our drawings by the Marietta Manufacturing Co. at Pt. Pleasant, W. Va.

At Cabin Creek refinery the company owns seven acres of bottom lands along the river channel which permits the boats to dock without difficulty. There are three 3-inch pipe lines running from the refinery to the dock and at this time three tanks are being erected to handle products that will henceforth be shipped by river.

SKELLY TO DISTRIBUTE ETHYL GASOLINE SOON

Skelly Oil Co. expects to begin distribution about September 20, of its new Skelly Aromax-Ethyl Gasoline. "Aromax-Ethyl," said a statement issued by the refining division of the company at Eldorado, Kans., "will be available to jobbers and dealers as fast as they meet the requirements of the Ethyl Corporation. Manufacturing facilities are already installed at Eldorao and complete advertising material, including Aromax-Ethyl pump globes, will be available some time around the middle of the month."

Skelly Oil Co. has for several years past marketed its orange colored Aromax gasoline, a 100 per cent petroleum product possessing nondetonating qualities. The addition of Ethyl, it is pointed out, will further add to the quality of the product.

The trademark of the new Skelly product will consist of a red circle bearing the words "Skelly Aromax-Ethyl Gasoline" with the orthodox Ethyl black and yellow design in the center.

TOURIST TRAVEL SWELLS CONSUMPTION IN CANADA

(Continued from Page 156)

per cent; British Columbia an increase of 20 per cent; Saskatchewan an increase of 10 per cent, and Manitoba an increase of 5.7 per cent.

Fifteen plants, with total daily rated capacity of 101,400 bbls., were listed. As the daily average of crude run through the plants amounted to 83,979 bbls., it is indicated that the Canadian refineries operated at 83 per cent of their rated capacity during 1929. Accompanying this article is a table showing the names, locations and capacities of the refineries listed.

The following table shows the petroleum products consumed or made for sale by Canadian refineries during 1928 and 1929. The quantities of fuel oil or gas oil used as cracking stock during the two years is not included.

Output of Canadian Refineries, 1928 and 1929

Products and Unit—	1928	1929
Gasoline, bbls.	9,832,282	12,474,875
Fuel and gas oil, bbls.	10,326,481	12,819,993
Solvent naphtha, bbls.	141,699	207,694
Kerosene, bbls.	1,599,483	1,410,354
Lubricating oils, bbls.	579,811	695,493
Grease, lbs.	14,439,030	17,042,195
Tar, lbs.	.....	1,032,500
Asphalt, bbls.	637,903	1,066,667
Wax and candles, lbs. .	15,872,946	10,776,352
Petroleum coke, tons .	95,908	109,516
Still gas, M.C.F.	2,489,346	3,140,187

WILLIAM ELDER DIES

CHATHAM, Ontario, Sept. 13.—William Elder, who drilled the famous Dingman discovery well which in 1914 opened the Turner Valley Field, died suddenly at Calgary on August 31. Born in Monterey, Pa., Mr. Elder had been a resident of Calgary for 24 years. In 1912 he joined with W. S. Herron, A. W. Dingman and others in the old Calgary Petroleum Products Co., and took charge of the drilling of No. 1, later known as the Dingman well, and now Royalite's No. 1, the first well to strike production on Sheep Creek.

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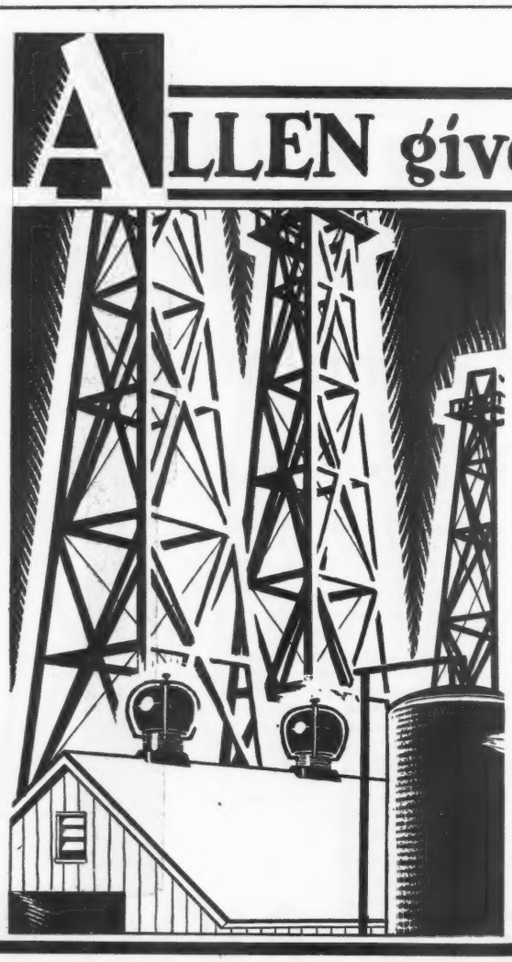

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ALLEN AIR TURBINE VENTILATORS

USEFULNESS OF SYNCHRONOUS MOTORS BROADENED BY RECENT IMPROVEMENTS

It has been only a short time since the application of synchronous motors was limited largely to high-speed drives, where the driven machines were started without load. Later low-speed synchronous motors were used for connection through a suitable clutching mechanism to the load. During the last 15 years, however, improvements have been effected in the starting and operating characteristics, simplicity and reliability of synchronous motors and the control has been made more simple and flexible. These developments have resulted in broadening the field of application of the synchronous motor until now it is used on many applications in place of the induction motor.

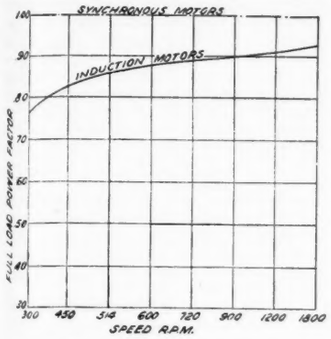

Figure 1—Typical full load power factors of 250-h.p. induction and 1.0-p.f. synchronous motors at various speeds.

Advantages of synchronous motors at speeds of 600 r.p.m. and above are derived to a great extent from applications requiring one or more features as power factor improvement, highest obtainable efficiencies, absolutely constant speed, or operation for long periods at partial loads. Of these, power factor correction is the most common of all reasons for installing high-speed synchronous motors. Generally squirrel cage motors rated at 250 horsepower and smaller at 600 r.p.m. and up with manually operated starting compensators are less expensive than unity power factor synchronous motors of the same rating with the necessary direct current exciters and reduced voltage manual starters. Because of the difference in price of the high-speed motors within these limits the squirrel cage induction motor may be chosen to advantage in most instances where power factor correction is not required, especially if a squirrel cage motor of the highest satisfactory speed is selected so that it will operate at rated full load.

Power Factors

High-speed induction motors operate at comparatively high efficiencies and power factor when under full load. However, power factors are much lower at low speeds than at high speeds and likewise the efficiencies decrease with the speed ratings. Another factor is that the starting torque of a squirrel cage motor decreases with the speed ratings. These characteristics of low-speed induction motors and the comparable first cost of synchronous motors in most cases warrant the use of the latter type for driving direct-connected low-speed machinery.

The principal advantages of synchronous motors are, in general, for high-speed applications power factor correction, higher efficiencies, constant speed irrespective of load conditions and starting torques comparable with squirrel cage induction motors.

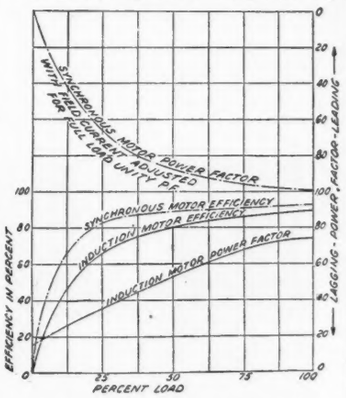

Figure 2—Comparative characteristics of 200-h.p., 300-r.p.m. 60 cycle synchronous and induction motors.

In low-speed applications the advantages are power factor correction,

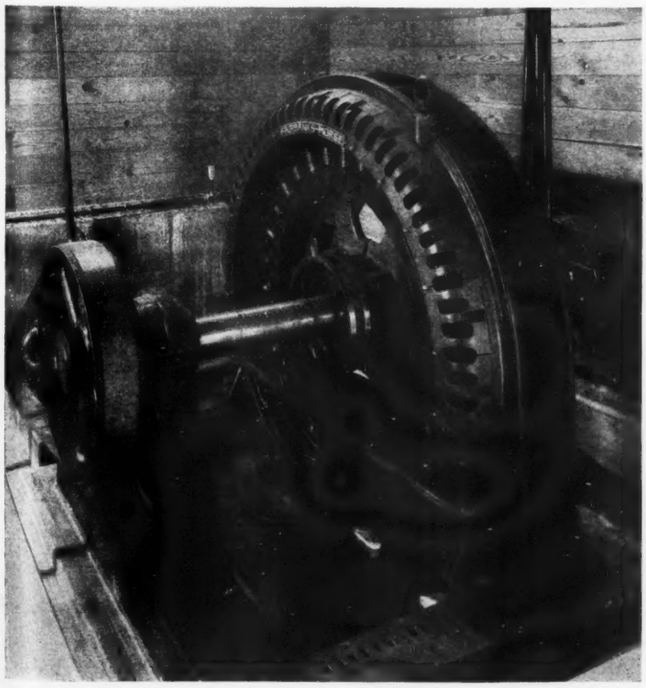

Figure 3—Typical example of the advantageous application of the synchronous motor: a 500-h.p., 240-r.p.m. Fairbanks-Morse unit used for pulp grinding in a paper mill.

Spread G & B Pipe Sealing Compound on the male threads only, after making certain that all threads are absolutely clean. Just this will insure an impenetrable seal for the joint.

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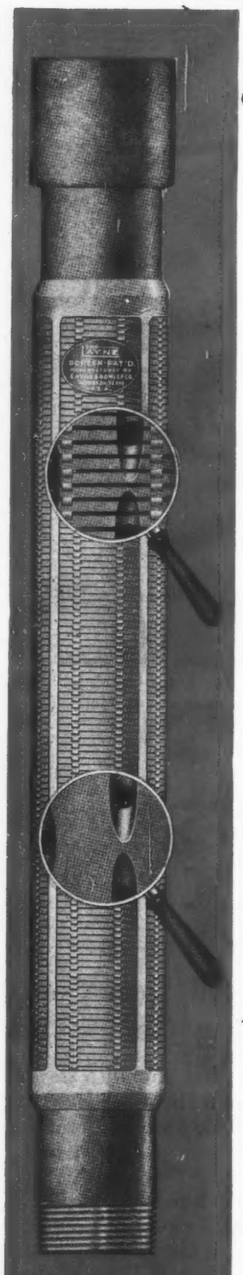

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Vickers, Limited London, England

higher efficiencies and constant speed irrespective of load conditions as in the first group. In addition these motors are available for practically any commercial application and they are recommended for automatic starting by means of inexpensive, simple and reliable across-the-line type, full voltage push button starter. They are especially adapted for direct connection to the load; require minimum floor space; are comparable in cost with high-speed induction motor and the required speed-reducing drive for application to low-speed machinery. They are subject to lower maintenance expense than a high-speed motor and the required speed-reducing devices and are less expensive than an induction motor of equal horsepower and speed rating.

Certain inherent characteristics of synchronous motors make possible a most economical and satisfactory design in speeds ranging from 1,800 r.p.m. down to 72 r.p.m. Induction motors, however, below 600 r.p.m. suffer a great handicap in performance because of design limitations, and for this reason when driving slow-speed machines, high-speed motors are used with mechanical speed-reducing mechanisms such as belts, chains or gears.

Elimination Sought

Elimination of all forms of mechanical speed-reducers is constantly sought by operating engineers as the elimination of every possible step in the conversion of power in their plants means the elimination of possible causes of maintenance expense and interference with continuous production.

Power losses in mechanical speed-reducing mechanisms vary from 2 to 15 per cent or more of the total power transmitted. Directly coupled synchronous motors avoid these losses.

Maintenance of high power factor results in great economies in the generation, transmission and transformation of electric power as compared to operation with a low, lagging, power factor. Induction motors always operate at a lagging power factor, which becomes excessive at speeds below 600 r.p.m. and at part load. Synchronous motors always operate at unity power factor, which is the most efficient power factor for the operation of an electrical power system or at a leading power factor to compensate for the lagging power factor of induction motors on the system.

Thus the installation of synchronous motors always results in raising the power factor. To the user who buys his power this will likely result in a lower power rate as well as saving in electric power transmission losses in his plant and the maintenance of a more constant voltage.

Users of electrical energy are interested in power factor correction in so far as it reduces operating costs and provides better service. Increasing the plant power factor may be beneficial in that it may afford an opportunity to add load to lines and transformers which may be fully loaded, without increasing either line or transformer capacity or it may effect a reduction in load on overloaded lines and transformers without reducing the connected horsepower load.

Actual Current Taken

Actual current taken from the line by a synchronous motor is either in phase, leading or lagging, depending upon the amount of exciting current supplied to its direct current field. The power factor may be kept at unity with the current and voltage in phase by proper adjustment of the direct current field excitation or by over exciting the field a leading current and power factor may be obtained.

In most commercial applications of synchronous motors, the field current is adjusted for rated load and power factor. If the load decreases under these conditions the motor will operate at a greater leading power factor, giving more than normal power factor correction.

A unity power factor motor of a rating larger than is necessary to drive its mechanical load will have sufficient stator capacity to operate at some leading power factor; however, an oversize unity power factor motor should not be used for leading power factor operation because of the limitation in capacity of the direct current field and the lower efficiencies. Instead a motor should be used with the required horsepower rating necessary to drive the mechanical load and at a leading power factor rating to give the required power factor improvement.

One desirable feature of the synchronous motor is its inherent tendency to stabilize line voltage. High line voltage causes a decrease in the leading reactive kva. and low voltage within certain limits causes an increase in the leading reactive kva. These characteristics therefore, assist in holding a constant voltage.

Early Forms Awkward

Synchronous motors, in their earliest form, were awkward and difficult to control. These objections have been removed, however, and the modern synchronous motor is a rugged machine that can be installed anywhere in the plant, operated by unskilled attendants, and

Figure 4—Example of the application of a synchronous motor to an existing compressor in an industrial plant primarily for power factor improvement.

will give the same continuous service, low maintenance expense and long life that can be realized with the best induction motors.

The widespread use of synchronous motors in industry dates from the time these motors were provided with squirrel cage windings in the pole faces for starting and were thus able to start and accelerate to full speed with at least a part of their full load. Even with the use of a starting winding, early synchronous motors were built from alternator designs to secure manufacturing economies and as a result the advantages of a design for best synchronous motor characteristics were not then realized.

Torques now available in the modern synchronous motors have been largely responsible for a greatly enlarged market for this type of motor. There are many applications that are now best driven by synchronous motors which were considered totally unsuited only a few years ago. The elimination of the need for clutches and the simplification of control made possible by full voltage starting has done a great deal to popularize the use of synchronous motors.

Closely allied with starting and pull-in torques, in synchronous motor design, is starting kva. This varies from approximately 200 per cent to 250 per cent for motors for low speed compressors and similar applications started on full voltage to several times this amount for applications requiring very high starting and pull-in torques.

Pull-out torque is of importance for loads that vary over a substantial range during normal operation. Full understanding of design factors affecting the pull-out torque of synchronous motors has made possible many successful applications that have heretofore been considered as being totally unsuited for this type of motor.

PERFECT ORGANIZATION OF COMMITTEE ON CODE

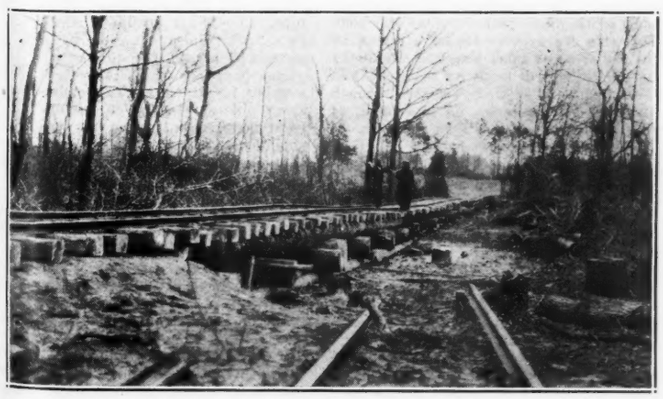
Permanent organization of the Arkansas code committee formed to put into practice the approved Marketing Code of Ethics was effected last week at a meeting in headquarters recently established at 208 Gay Building, Little Rock. J. A. Welsh, of the Louisiana Oil Refining Corp.'s Arkansas division headquarters at Little Rock, was made chairman and W. S. Kotch, Magnolia Petroleum Co., vice chairman. J. C. Schoo, Jr., is secretary.

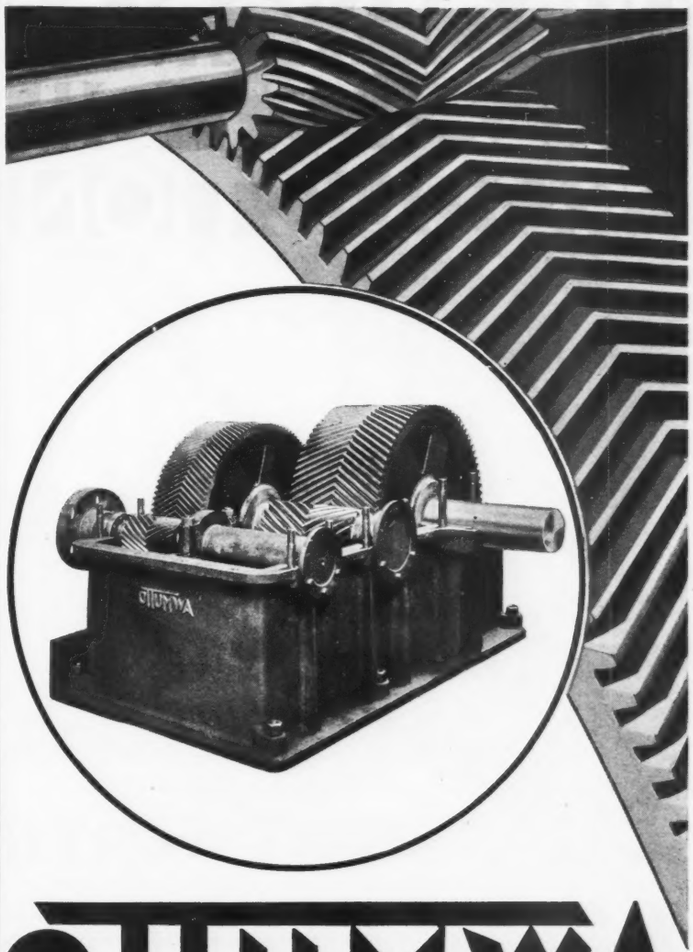
The meeting was attended by 27 representatives of the Transcontinental Oil Co., Barnsdall Refining Co., Lion Oil Sales Co., Continental Oil Co., Standard Oil Co. of Louisiana, Magnolia Petroleum Co., Gulf Refining Co., Baker Oil Co., The Texas Company, Louisiana Oil Refining Corp., Burton Oil Co., Central Tire Co., Wayne Co. of Little Rock, Houston Oil Co., Rex Oil Corp. and Shelt Petroleum Corp.

Permanent organization of the Mississippi code committee also was effected at a recent meeting in Jackson with the election of R. W. Dunn, American Oil Co., Hattiesburg, as chairman, and J. H. Bivens, Jr., secretary. Headquarters of the committee are at 420 Standard Life Building, Jackson, Miss.

PRODUCER BUILDS RAILROAD INSTEAD OF PIPE LINE

SHREVEPORT, La., Sept. 15.—Ordinarily, when an operator wants to get his oil to a shipping point he builds a pipe line but not so Will Hall of the Louisiana Petroleum Co. operating in the Carterville district of Bossier Parish, Louisiana. The Louisiana Oil Refining Co. and Standard Pipe Line Co. have lines into the field but they are crowded. Furthermore Carterville is hard to get into with supplies, especially during the rainy months in which most of its development took place. So, instead of building a pipe line Hall built himself a railroad, 12 miles of standard gauge track from Lela, on the Cotton Belt, to the field, using a Plymouth gasoline locomotive for motive power. Ties and rails are raised a foot or two above the surface to keep the tracks out of water. So far President Hall has not given his railroad a name but it seems the E.&R. R.R. (Emergency and Relief) would not be a bad one.





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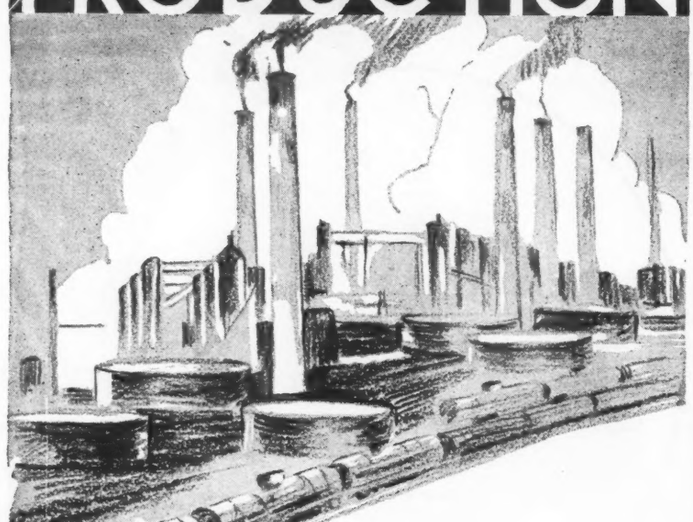

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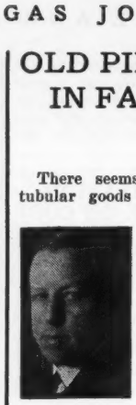
19 RAIL OUTLETS

OLD PIPE PUT TO MANY NEW USES IN FASHIONING OIL FIELD EQUIPMENT

By L. G. E. Bignell
Petroleum Engineering Editor



There seems to be something about tubular goods that appeals to the ingenuity of the oil field worker. He is constantly finding new and novel uses for both old and new pipe, and as it is relatively plentiful around oil field and refining plants there seems to be no limit to his clever inventions.

New pipe has long been used for derrick members and in some instances rig fronts consisting of samson posts and jack posts are made out of new pipe. Old pipe is also used for these purposes.

The shafts in bullwheels and calfwheels and sand reels lend themselves to the use of pipe and it has been adopted by many manufacturers as standard for these purposes. In other industries the mechanical engineer does not think in terms of pipe in designing apparatus for hoisting and therefore the drums for holding rope and cable are built up out of cast steel flanges with rolled plate steel bodies.

For small pony bullwheels and replacement wheels for pumping wells shaft are made out of discarded casing and in this way this old material further serves the industry. Shells for reinforcing calfwheel shafts are also made by some companies by welding 18-inch casing over old 15-inch calfwheel shafts, using a system of spacers between the two pieces of pipe which also serves to strengthen the whole structure against crushing.

To mount the bullwheels and calfwheels many ingenious types of posts and bearings have been made out of discarded pipe and casing and most of these posts and their braces are specially designed to fit some particular place, so the dimensions are not uniform although the general design is the same.

Alignment of Wheels Assured

These posts are frequently set in concrete where it is intended to continue pumping the well for some time. This type of mounting also assures alignment of the wheels at all times. To set posts in concrete it is usually the practice to erect all equipment in its permanent position and then pour the concrete around the base of the posts. Concrete floors for derricks are becoming common as are foundations for samson posts and jack posts. This type of construction makes the rig practically fireproof and the job once done will last indefinitely.

In the Tonkawa, Okla., Field the Shell Petroleum Co. has several rigs of this permanent type and has used old pipe to form sucker rod racks which run parallel to the side of the belt house.

These racks are built by first setting 12 to 18-inch lengths of 3-inch pipe in concrete and into these shallow holes the 2½-inch upright pipe supports for the rod rack itself are inserted. These upright posts are bored with a number of holes and short lengths of sucker rods inserted to form the rests for the sucker rods as they are pulled out of the well. The rods are kept in separate layers by the use of other short pieces of old sucker rod bent to form loops at each end and these loops are slipped over the 2½-inch upright posts as soon as one layer of rods has been laid down on the rack.

The Empire Companies at Oil Hill, Kans., make frames for supporting pump jacks out of 6⅝-inch pipe that are both portable and sturdy. These frames are made up at the machine shop and are welded together and transported to the location where they are to be used and set in concrete piers. Old jack post turnbuckle rods and other old rods are used for turnbuckle braces between the upright and base members of this frame.

Make Counterweights Too

Some of these pump jacks are counterweighted with short lengths of old casing filled with water or cement as the particular well may require. They are fastened to the base member of the jack by means of a short channel iron frame that extends away from the well end of the jack and to this the casing counterweight is fastened by "U" bolts.

It is common practice on the Empire Companies properties in Kansas and elsewhere to equip old wells with reclaimed pipe "A" frames for handling rods and tubing. At most of these wells the old derricks have been moved to some other location or have blown down and it is assumed that the wells will not produce long enough to justify erecting other derricks.

These "A" frames are 40 feet high and at the top is mounted a reclaimed sand sheave. The base may be set in concrete, but most frequently it rests upon old sections of 16-inch wooden main sills and with proper guying with old wire lines these frames form substantial structures for pulling the light wells.

This practice was started some six years ago when a number of derricks blew down and as all the "A" frame can be reclaimed and moved to other wells as needed, there are only about 25 or 30 of them in actual use in the Kansas districts near Eldorado and Augusta.

It is desirable to use rod line pumps on many leases where the wells are being pumped by central powers and as the stroke of these powers is about 24 inches and the pump has the same stroke it is necessary to interpose between the power and the pump some type of level that will shorten the pump stroke.

This is done by setting upright pipe posts about 25 feet away from the rod pumps and connecting the end of the rod line from the power to the upper portion of the swing post. At a predetermined distance below is placed a yoke to which is connected a pipe reach rod that transmits the reciprocating motion of the swing post to the pump.

Frames Made of Old Pipe

The pumps are set upon frames made out of old pipe and pipe braces are placed between the base of the pump frame and the base of the swing post. The swing post is provided with old side iron bearings at the lower end and the boxes are bolted to concrete piers. This is only one of many uses found for old pipe and casing around central powers.

Knockoff posts are made out of pieces of old 8¼-inch casing set in concrete. These pieces of pipe are slotted at the upper end to provide openings through which the rod line can pass. To accommodate the device to the different positions of the power eccentrics wooden plugs are driven into the top of the posts and holes drilled through the plug to coincide with the slots in the pipe.

As it is well known that moisture inside of pipe hastens corrosion it is common practice to plug the top of all upright pipes. These plugs are for the most part made from old reclaimed wood.

Bull post supports are made out of old 5-inch pipe and the holdups and holddowns are also made out of reclaimed pipe. They are made in the form of two "A" frames set side by side and connected across the top with a short piece of pipe to which the vertical swing member is attached. The ends of these short pipe shafts rest in babbitted bearings mounted on top of the "A" frame side members and are lubricated by oil that flows from oil cups on the upper side of the pipe shaft.

Another type of rod pump installation is made by placing two pumps side by side, about 12 feet apart and driving them by reach rods made of old pipe that is connected to the ends of the swing pipe. The rod lines, two in number, also connect to the ends of this swing pipe so that the pumps move in opposite directions but are in balance.

Pivot Made From Bandwheel Flanges

The pivot for this pipe swing is made out of a set of old bandwheel flanges

with the vertical shaft, 5 inches in diameter, imbedded in concrete. The yokes for the end of the pull rods are made out of old brake levers and the whole piece of apparatus is manufactured at the shop and assembled at the location. It is therefore portable and can be reclaimed readily.

Some other problems that come up when wells are pumped from central power have been solved by the use of old pipe. In one instance the well had to have a vacuum applied to make it produce, but did not warrant the installation of a separate vacuum pump. It was decided to install a vertical type vacuum pump in the rod line.

This was accomplished in an ingenious manner by mounting a short walking-beam made out of old pipe on top of an "A" frame that straddled the rod line. From this horizontal beam there extends downward a vertical pipe member that is braced to the back end of the walking beam and to the lower part of this vertical member is attached the rod line.

Around the lower end of the vertical member there is also passed a long link that continues around the connecting rod on the vacuum pump and then to the end of the pull rod that goes to the well. In this way the rod line produces a vacuum for the well that it pumps.

Old Saddles and Side Irons Utilized

Old saddles and side irons are used for the fulcrum for the walking beam and the stroke of the vacuum pump is about 21 inches. It makes about 14 strokes per minute. This outfit was installed November 28, 1927, and is still giving satisfaction. It is on Empire Companies' C. Koigler lease, Section 17-9-26, in the Eldorado, Kans., Field.

It is frequently advisable to run rod lines across small streams and ravines on suspension bridges rather than follow the ground contour. Many of these bridges are made out of old wire lines carried on old reclaimed pipe supports, the height of the supports varying to suit the ground contour. The rods in this way are maintained at a fixed level.

In material yards where old and new equipment is stored and handled it is the usual practice to place as much of this material as possible on racks at about the level of the truck bodies so that the work of loading and unloading will be minimized.

Old pipe is used at Eldorado, Kans., for this purpose and not only is the frame of this platform made out of casing but the floor itself is made out of old 2-inch pipe laid close together and bolted to the pipe joists at suitable points so that the upper ends of the bolts do not interfere with the sliding of the machinery on and off the platform.

Same Idea in Water Tank Support

This same idea has been carried out in a water tank support that was made out of a damaged steel derrick. The upper part of the derrick was not used and a platform was substituted for the crownblock. This platform is made out of 2-inch pipe bolted to joists of old pipe and the tank is set directly on the pipe platform.

The Empire Companies have adopted a definite plan in handling old pipe and as it is received in the Oil Hill yard it is classified as "C" or "D" grade and examined for condition. Such of it as can be used for making equipment like that described is then classed as "B" grade pipe and charged to the job where it is used or to the manufacturing cost of the piece of equipment at about 70 per cent of the cost of new pipe of like size and weight. This gives the pipe definite value for reuse and when it is not good enough to be so valued it is sold as junk.

There is a department in the Oil Hill yards where pipe is handled and straightened, cleaned and made ready for cutting and use. Seven hundred joints of 2-inch pipe have been passed through this department in one month in addition to other sizes.

The pipe before it goes into service again is tested with water at pressure that is deemed sufficient to insure that the pipe will be suitable for the purpose for which it is to be used. This test system is also applied to reclaimed valves, only air is used in testing the valves.

This recital of uses for old pipe might be continued almost indefinitely, for workers everywhere in the old industry find some way in which to utilize this kind of material. It seems safe to state that of all equipment used by the industry tubular goods continues to serve some useful purpose longer than anything else in the same general class.

NEW LOCATIONS IN TEXAS PANHANDLE AND NORTH AND WEST TEXAS FIELDS

TEXAS PANHANDLE

Carson County

Gulf Production Co.'s No. 3 B. F. Block, 330 feet south and east of the NW cor. of Section 111, Block 4, I.&G.N. Survey.

Gray County

British-American Oil and Shell Corp.'s No. 4 A. Smith, 330 feet south and west of the NE corner of the east half of the NW of Section 138, Block 3, I.&G.N. Survey. Danciger Oil & Refining Co. and others' No. 8-A W. Jackson, 405 feet south and 330 feet west of the NE NW, Section 88, Block B-2, H.&G.N. Survey. Magnolia Petroleum Co.'s No. 4 R. J. Sailor, 990 feet south and 330 feet east of the NW cor. E half NE, Section 138, Block 3, I.&G.N. Survey. Shamrock Oil & Gas Co.'s No. 2 E. E. Reynolds, 330 feet south and east of NW cor. SE SE, Section 84, Block 3, I.&G.N. Survey.

Moore County

Dana Oil & Gas Co.'s No. 1 R. Utey, 330 feet south and west of NE cor. W half SE, Section 135, Block 3-T, T.&N.O. Survey. L. D. Gaunt's No. 1 W. H. Reeder, 330 feet south and west of NE cor. N half E half NE, Section 191, Block 3-T, T.&N.O. Survey. Shamrock Oil & Gas Co.'s No. 1 W. Coffee, 330 feet south and west of NE cor. of the east 160 acres of Section 355, Block 44, H.&T.C. Survey. Sunray Oil Co.'s No. 1 C. R. Jones, 330 feet north and west of SE cor. W half SW, Section 164, Block 3-T, T.&N.O. Survey.

NORTH CENTRAL AND WEST TEXAS

Archer County

W. C. Young's No. 2 W. H. Taylor-C, 150 feet south and 450 feet east of the NW cor. SE, Section 1, S.P.R.R., A-428 Survey. Bridwell Oil Co.'s No. 1 F. C. Green-B, 2,933 feet north and 3,819 feet east of the SW cor. of the Joseph Levins Survey A-259, being 450 feet north and 150 feet east of the SW cor. of their 82.5-acre lease "B." R. J. Brown's No. 1 S. Webb, 150 feet north and east of the SW cor. of the north 120 acres of the S. Webb 465-acre tract out of the I.&G.N. Survey A-239. Hedrick-Camp Drilling Co.'s No. 1 S. Webb, 150 feet south and east of the NW cor. of the south 120 acres of the north 360 acres of the S. Webb 465-acre tract out of the I.&G.N. Survey A-239.

Brown County

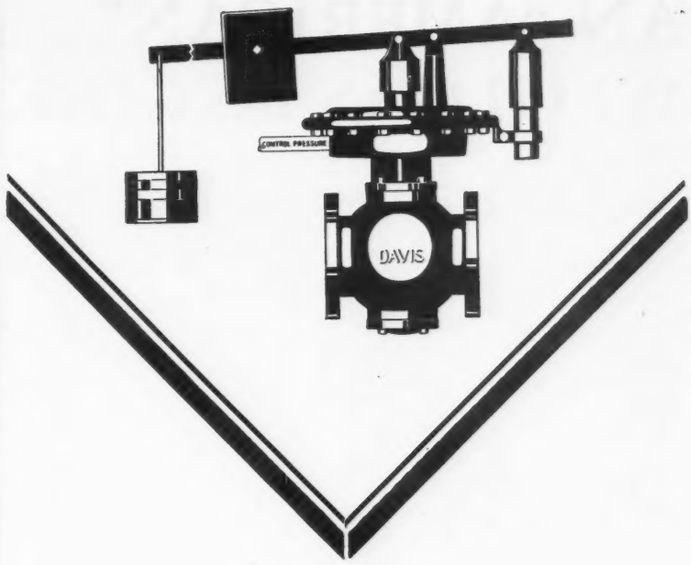
Prairie Oil & Gas Co.'s No. 2 F. W. Turner, 2,190 feet south and 1,350 feet east of the SW cor. of the M. V. Houndshell 100-acre tract and located on the F. W. Turner 2,110-acre tract out of the M. Duncan Survey No. 55.

Callahan County

G. A. Perry and others' No. 1 W. T. Wheeler, 150 feet north and 950 feet east of SW cor., Section 119, B.B.B.&C. Survey.

Clay County

Mid-Continent Holding Corp.'s No. 7 J. D. Stine and others-A, 750 feet north



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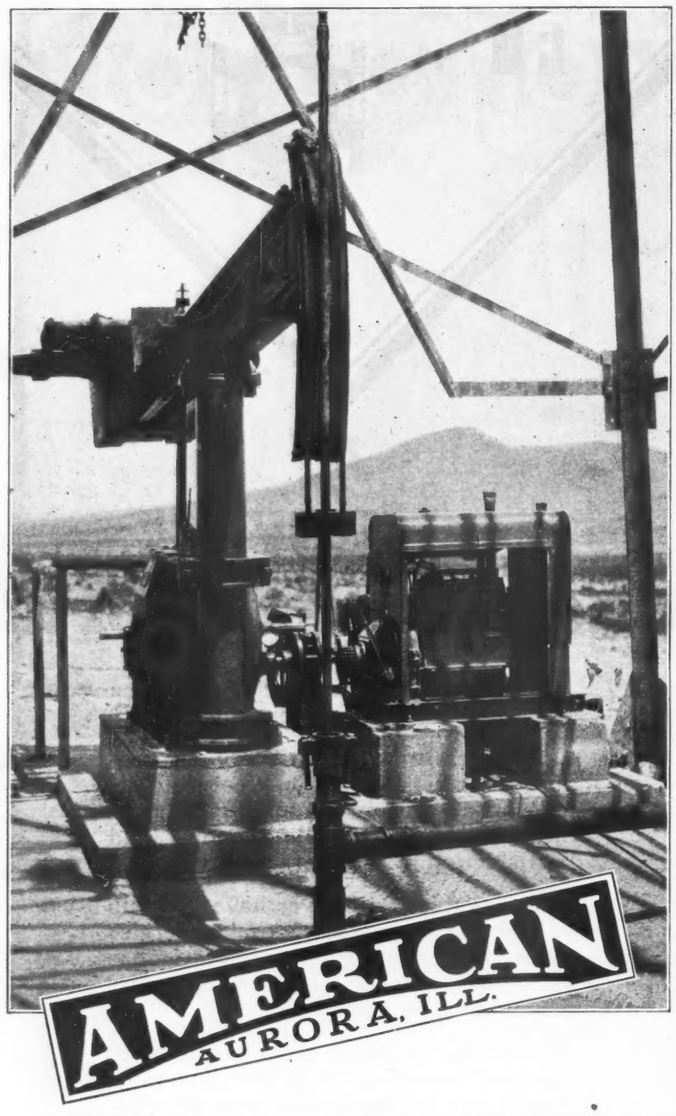

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and 150 feet east of SW cor., Section 7, Parker County School Land Survey, A-374.

Coleman County

Gibson-Payne & Clark's No. 2 John Rogers, 650 feet south and 150 feet east of the NW cor. of the C. T. Rountz Survey No. 745. Lloyd Oil Corp.'s No. 15 R. G. Bartholomew, 2,975 feet north and 775 feet east of the SW cor. of the W. Farris Survey No. 279. Sterling Oil & Gas Co. and others' No. 1 W. M. McCulloch, 200 feet south and 170 feet east of the NW cor. of the south 80 acres of the W. M. McCulloch 268-acre tract out of the M. Lappe Survey No. 744.

Cooke County

The Texas Company and Monroe's No. 1 J. F. Huggins, 150 feet south and west of the NE cor. of the west 60 acres of the south 100 acres of the J. F. Huggins 180-acre tract out of the S.P.R.R. Survey No. 23, A-986.

Erath County

Texas Pacific Coal & Oil Co.'s No. 2 Texas Pacific Coal & Oil Co., 1,150 feet south and 5,300 feet west of the SW cor., Section 23, Indianola Railroad Co. and located in the J. M. Diaz Survey.

Howard County

Greene Oil & Refining Co. and others' No. 1 D. H. Snyder, 1,320 feet south and west of the NE cor., Section 27, Block 30, Township 1s, T.&P. Survey.

Irion County

F. E. Webb and others' No. 1 W. H. Williams, 750 feet north and 200 feet west of the SE cor. SW NE, Section 10, Gonzales County School Land.

Jones County

McBest and others' No. 1 Mrs. L. Roberts, 2,660 feet south and 3,190 feet west of the NE cor. of the John Gassner Survey No. 8, A-188.

Midland County

Nordon Oil Co.'s No. 1 J. M. Mathena, 2,310 feet south and 335 feet east of the NW cor., Section 40, W. T. Gray Survey.

Montague County

McCrory & McCrory's No. 2 Mrs. S. F. Loy and others, 150 feet south and 450 feet west of the NE cor. of their 25-acre lease out of the William Donoho Survey A-178.

Palo Pinto County

L. E. Lasater and others' No. 1 Texas Pacific Railroad Co., 548 feet north and 3,300 feet west of the most easterly SE cor. of the A.B.&M. Survey No. 5, A-21.

Reeves County

Biggs & Smith's No. 1 Cherokee L. & I. Co., 2,390 feet south and 330 feet east of the NW cor., Section 4, Block 7, H.&G.N. Survey.

Scurry County

Seifert & Dibble's No. 1 J. M. Blackburn, 330 feet north and west of the SE cor. NW, Section 155, Block 97, H.&T.C. Survey.

Stephens County

Lyman and others' No. 1 W. E. Smith, 200 feet south and east of the NW cor. of the east 10 acres of the south 120 acres of the north 240 acres of Section 1, Blind Asylum Land.

Throckmorton County

E. J. McCurdy's No. 1 Reynolds Cattle Co., at the center of the NE NE, Section 13, Block 2, A.B.&M. Survey.

Wichita County

R. R. Clark and others' No. 1-A J. J. Cabe, 450 feet north and 1,170 feet east of the SW cor., Section 270, Waggoner Colony Subdivision. Douglas Production Co.'s No. 2 Douglas Production Co., 150 north and 675 feet east of the SW cor., Section 287, Waggoner Colony Subdivision.

Winkler County

L. C. Turman and others' No. 1 L. Daugherty, 2,310 feet north and west of the SE cor., Section 16, Block 74, School Land.

Young County

Arkansas Fuel Oil Co.'s No. 1 S. R. Jeffery-B, 150 feet south and east of the NW cor. NE, Section 47, T.E.&L. Survey. C. F. Beavers' No. 1 Belknap Coal Co., 150 feet south and west of the NE cor. of the west 40 acres of the south 80 acres of the Kelknap Coal Co. 208.6-acre tract out of Section 22. T.E.&L. Survey. P. B. Goodwin's No. 1 C. F. Morgan, 500 feet south and 1,700 feet east of the most westerly NW cor., Section 348, T.E.&L. Survey. P. F. Gwynn's No. 1 S. R. Jeffery, 150 feet north and east of the SW cor. of the east 60 acres of the N half of Section 42, T.E.&L. Survey. J. Harris' No. 1 N. Brooks, 150 feet north and west of the SE cor., Section 299, T.E.&L. Survey. J. Harris' No. 1 J. W. Bullock and others, 150 feet north and west of the SE cor. of the west 60 acres of the east 120 acres of the S half of Section 327, T.E.&L. Survey. Heydrick and The Texas Company's No. 1 S. R. Jeffery, 150 feet north and 450 feet west of the SE cor. NW. Section 48, T.E.&L. Survey. King Roy & Bullington's No. 5 J. & C. Graham, 450 feet south and 150 feet west of the NE cor., Section 2,249, T.E.&L. Survey. Murphy Oil Co.'s No. 1 W. H. Greer, 150 feet south and east of the NW cor., Section 77, T.E.&L. Survey. Petroleum Production Co.'s No. 1 J. & C. Graham, 150 feet south and west of the NE cor. of the south 48 acres of the north 88 acres of the J. & C. Graham 200-acre tract out of Section 2,249, T.E.&L. Survey. Willis & Terrell's No. 1 J. Sosteric, 150 feet south and east of the NW cor. of the east 30 acres of the SE, Section 278, T.E.&L. Survey. Yell & Son's No. 1 J. J. Williams, 750 feet north and 150 feet west of the SE cor., Section 257, T.E.&L. Survey. Connor Sons & Clougheys No. 4 H. M. Ford, 950 feet north and 1,000 feet east of the SW cor. of the south 115 acres of the north 160 acres of the W. T. Carter Survey A-62. J. E. Thompson and others' No. 1 J. W. Daws, 150 feet south and east of the NW cor. SE, Section 752, T.E.&L. Survey.

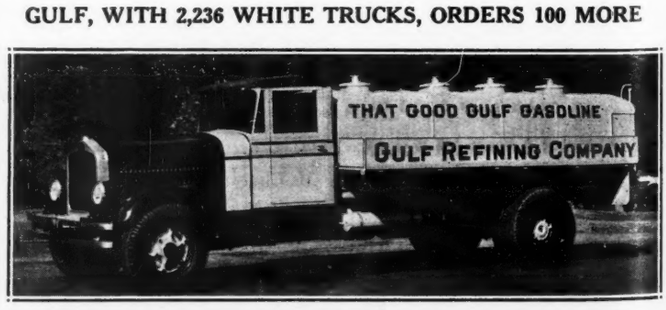
Corrections—Pecos County

Cardinal Oil Co.'s No. 4 J. H. Tippett (Kirby), 1,050 feet north and 150 feet west of the SE cor. W half, Section 40, Block 194, G.C.&S.F. Survey.

OIL PROVEN IN ALASKA

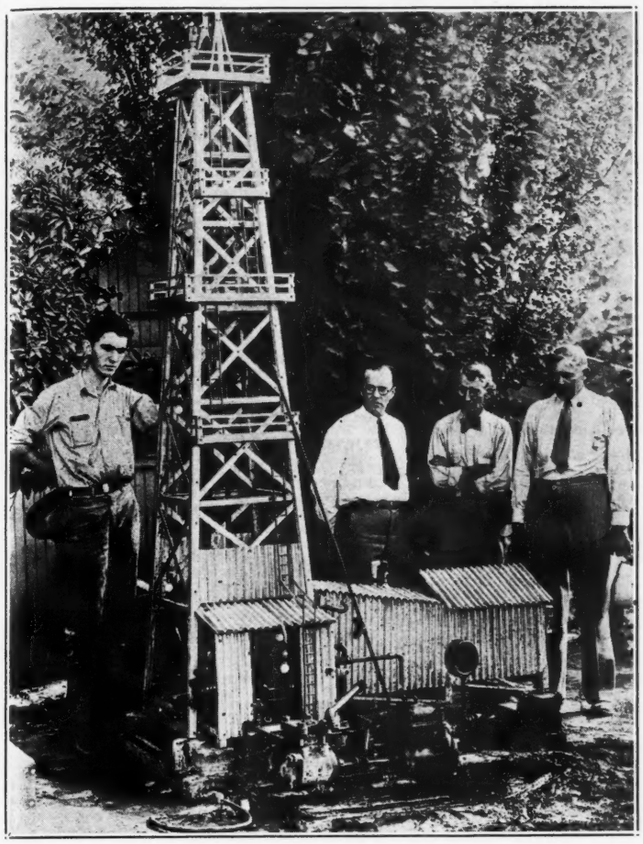
The Geological Survey announces that as a result of its investigations in northern Alaska, the occurrence of petroleum has been proven. Reports are based on a survey of 35,000 square miles of territory which comprises a naval petroleum reserve set aside from entry by executive order some time ago.

GULF, WITH 2,236 WHITE TRUCKS, ORDERS 100 MORE



The Gulf Refining Co., which operates 2,236 White trucks, recently placed an order with the White Co. for 100 new units for delivery this year. Here is one of the first to be delivered, a newly developed heavy duty White model with a six-cylinder 100-horsepower engine. It is capable of high speed on the highway and carries an exceptionally large pay load.

BOY BUILDS MINIATURE OIL WELL



—Photo by Underwood & Underwood.

NORWALK, Calif., Sept. 15.—Julian Hathaway (extreme left), 16-year-old boy of Norwalk, with his miniature oil well, complete to the smallest detail. Duplicating in model form the big wells of the surrounding field, the amazing working model actually drilled a miniature well 90 feet deep when operated by its builder. So perfect was the model well that the General Petroleum Co., in whose field it was built, named it "Hathaway No. 2" and borrowed it for exhibition at the Los Angeles County Fair. Young Hathaway built the entire rig, engines, pumps and other details of construction in his own machine shop. On the right are, left to right: H. H. Swan of the General Petroleum Co.; J. E. Hathaway, Julian's father; and Jack Samuelson of the oil company which is sponsoring Julian's future activities as an engineer.

WILDCAT OPERATIONS IN KANSAS

(Continued from Page 52)

COFFEY COUNTY

Heyburg's No. 1 Kroft, SE SW SE Sec. 30-22-14 .....Spudding.
Prairie Oil & Gas Co.'s No. 1 Hatch, SE cor. Sec. 35-21-13..Drlg. 740 ft.
McGregor's No. 1 Wood, NE NW SW Sec. 20-22-15 ....Drlg. 650 ft.
Roberts et al's No. 1 Hay, SW SE NW Sec. 32-22-15 ....Fishing 1,100 ft.

COWLEY COUNTY

Tom Fine's No. 1 Boyd, NW NE Sec. 32-32-4 .....Shut down 2,650 ft.

DICKINSON COUNTY

Severs et al's No. 1 Lavengood, NE SW Sec. 13-13-2 ..Shut down 2,205 ft.
Kruger et al's No. 1 Diche, C NW NE NE Sec. 17-13-4 .....Shut down 2,935-43 ft.; water.
E. N. Morgan's No. 1 Whithair, NW SE Sec. 9-12-1 ....Drlg. 3,215 ft.

DOUGLAS COUNTY

Steinbuckle's No. 1 Unknown, SW NE NW Sec. 34-14-21..Shut down 1,100 ft.

ELLIS COUNTY

Central Commercial Oil Co.'s No. 1 Helms, SE cor. NE Sec. 2-12-20w .....Drlg. 3,583 ft.
Rush Oil Co.'s No. 1 Gatewood, NW cor. NW Sec. 4-15-20w .....Fishing 3,790 ft.

ELK COUNTY

Aladdin's No. 1 Donnell, NE SE SW Sec. 26-29-10 .....Spudding.
Croft & Frazier's No. 1 Keys, SE NE Sec. 26-31-10 .....Show oil 1,540-85 ft.; drlg. 1,775 ft.

ELLSWORTH COUNTY

Aladdin and Carter Oil Co.'s No. 1 Barecky, C NW Sec. 3-16-10w .....Rig.
Slick et al's No. 1 Hecken, NW cor. Sec. 25-17-10w .....3,000,000 ft. gas 2,495-2,500 ft.; drlg. 2,982 ft.

FORD COUNTY

Swain et al's No. 1 Kenthorne, C NW Sec. 21-25-24w ..Shut down 3,610 ft.

GOVE COUNTY

Johnson and Atlantic's No. 1 Wright, SE NE Sec. 11-12-27w .....Rig.
Valerius & Baucher Oil Co.'s No. 1 Todd, NW cor. Sec. 24-13-27w .....Drlg. 3,910 ft.

GRAHAM COUNTY

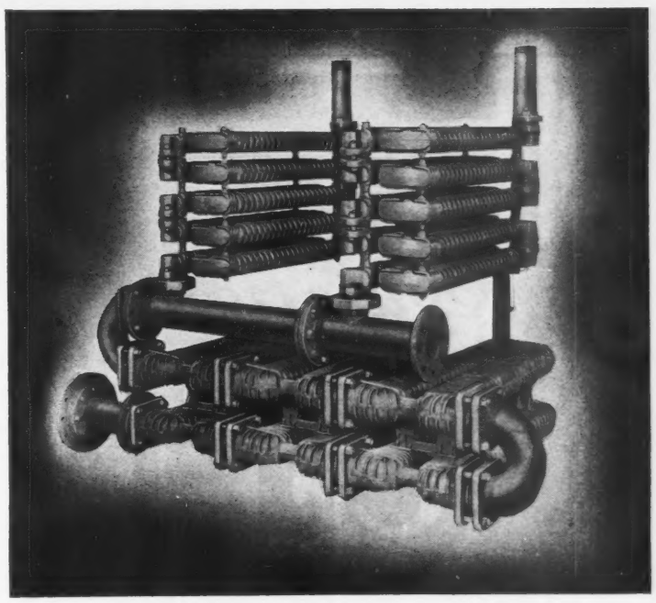
Gulf Coast Oil Co.'s No. 1 Johnson, C S half Sec. 27-8-25w..Shut down 4,370 ft.
Naylor et al's No. 1 St. John, NW SE SE Sec. 27-8-25w..Drlg. 4,731 ft.

GRANT COUNTY

McKenna et al's No. 1 Sullivan, NE cor. Sec. 12-29-38w..Shut down 50 ft.

GREENWOOD COUNTY

Staats et al's No. 1 Swan, NE NW Sec. 3-25-12 .....Rig.
Harwood Oil Co.'s No. 1 Log, SW NE Sec. 20-25-10 ....Drlg. 1,410 ft.
Mallory's No. 1 Denchfield, SE NW Sec. 12-27-9 .....Water 2,246-52 ft.; abd. 2,320 ft.
Bundy, Smith & O'Neil's No. 1 Ford, NE NW Sec. 28-25-13 .....Drlg. 800 ft.



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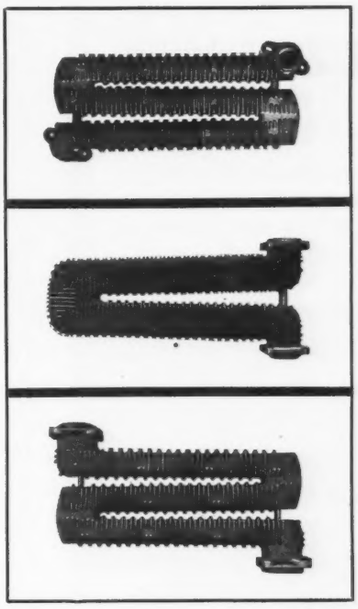
CONSTANT RENEWALS



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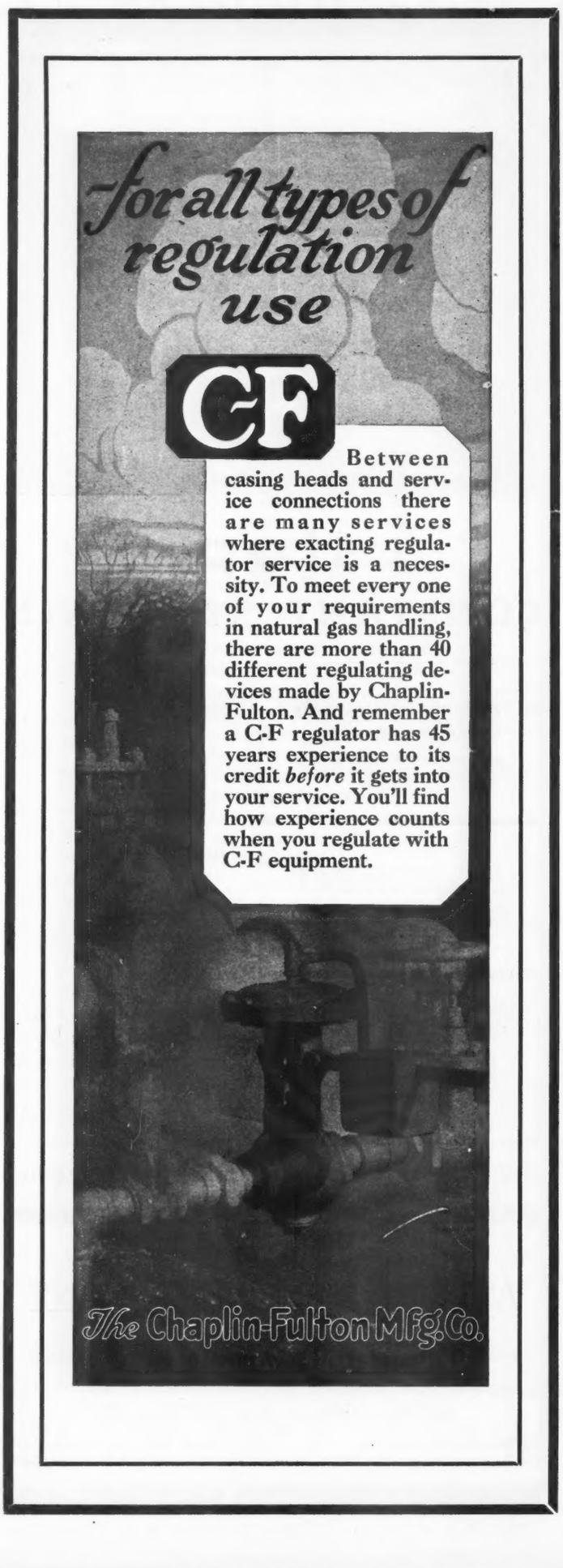
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The Chaplin-Fulton Mfg. Co.

F. Konkay et al's No. 1 Rock, NW NE NE Sec. 7-27-12..Shut down 1,836 ft.

HARPER COUNTY

Atkinson et al's No. 1 Misak, SE cor., Sec. 25-34-6w .....Rig.
Beeler et al's No. 1 Bear, C NE Sec. 21-31-6w .....Shut down 1,830 ft.

KINGMAN COUNTY

Skelly Oil's No. 1 Miles, NE cor. Sec. 30-27-10w .....Spudding.
Slick, Pryor & Lockhart's No. 1 Wetherall, NE SW Sec. 36-29-6w .....Drlg. 3,435 ft.

KIOWA COUNTY

Phillips-Prairie's No. 1 Bean, NE SE Sec. 10-30-17w ....Drlg. 3,950-55 ft.; water.
McKenna et al's No. 1 Ralson, C NE Sec. 14-28-20w ....Rig.

LYONS COUNTY

Griffith et al's No. 1 King, NW cor. Sec. 8-19-10 .....Shut down 910 ft.

MARION COUNTY

Magnolia Pet. Co.'s No. 1 Davis, SE NW Sec. 18-21-2 ..Drlg. 2,700 ft.
Dixie and Arkansas Fuel's No. 1 Hacker, NW NE Sec. 6-17-1 .....Drlg. 2,720 ft.
Marshall et al's No. 1 Higgins, NE cor. Sec. 33-19-5 ....Rig.

MARSHALL COUNTY

Swicker & Sincox's No. 1 Remple, C N half NW Sec. 22-4-9 .....Shut down 1,245 ft.
Brazier et al's No. 1 Runkel, SE NW Sec. 13-2-6 .....Shut down 50 ft.

McPHERSON COUNTY

Aladdin Pet. Co.'s No. 1 Larson, C NW Sec. 22-18-4w ....Rig on ground.

MORTON COUNTY

Argus Prod. Co.'s No. 1 Sullivan, C NW Sec. 29-34-39w...Shut down 2,695 ft.
Hydraulic Oil Co.'s No. 1 State Land, NW SE Sec. 22-24-43w .....Fishing 2,792 ft.; gas at 1,200-10 ft. and at 1,350 ft.

MORRIS COUNTY

Pratt et al's No. 1 Whiting, NW SW SW Sec. 34-16-6....Location.
Henderson et al's No. 1 Seisman, SW SE Sec. 24-16-9....Rig.
Urschell et al's No. 1 Scott, NE NW Sec. 6-16-6 .....Shut down 2,420 ft.

OSAGE COUNTY

Riggs & Smith's No. 1 Wood, SE NW Sec. 21-14-15 ....Shut down 410 ft.

PAWNEE COUNTY

Phillips' No. 1 Cuthbertson, NE cor. Sec. 27-20-18w ....Rig.
Skelly Oil Co.'s No. 1 Milhouse, C SE Sec. 34-23-71w ....Abandoned 5,602 ft.

PRATT COUNTY

Wilcox O. & G. Co.'s No. 1 Bappin, SW NW Sec. 7-26-15w .....Fishing 4,353-95 ft.; water.

RENO COUNTY

Braden et al's No. 1 Thersen, SE NE Sec. 6-22-4w ....Drlg. 640 ft.
Alco Royalty's No. 1 Kinney, SE cor. Sec. 16-22-7w ....Drlg. 1,325 ft.
Shell Pet. Corp.'s No. 1 Popp, NW cor. Sec. 11-25-5w ...Plugging back bad hole 2,692 ft.
E. L. Study and H. L. Turner's No. 1 Haury, NE NW Sec. 1-23-4w .....Shut down 3,313-20 ft.; 5,000,000 ft. gas.
Phillips Pet. Co. and Tom Palmer's No. 1 Harsch, NE SE Sec. 14-26-5w .....Drlg. 3,825 ft.
United Pet. Co.'s No. 1 Houston, NW cor. Sec. 4-22-10w ..Drlg. 3,415 ft.
C. A. Cheney and M. M. Valerius' No. 1 Stevens, C NE SE NE Sec. 6-26-7w .....Drlg. 4,160 ft.

RICE COUNTY

United Pet. Co.'s No. 1 Willman, NE cor. Sec. 29-21-9w ..Drlg. 2,005 ft.
Gypsy Oil Co.'s No. 1 Koch, SE NE NW Sec. 35-20-9w ..Drlg. 3,475 ft.
Hershey Golden & Skelly's No. 1 Brandenstein, Sec. 10-19-10w .....Drlg. 2,340 ft.
Tatlock et al's No. 1 Ploog, C SW SE Sec. 33-18-9w ....Silicious line 3,252-53 ft.; flowing 30 bbls. an hr. when shut in.

ROOKS COUNTY

Streeter-Stearns' No. 1 Conger, SE NW NE Sec. 16-10-16w .....Drlg. 900 ft.

RUSH COUNTY

Prairie et al's No. 1 Lecker, NW SW SW Sec. 5-16-18w..Drlg. 2,620 ft.
Syndicate Oil Co.'s No. 1 Lannen, C SW Sec. 11-18-16w..Location.
McPherson O. & G. Co.'s No. 1 Brack, C NW Sec. 24-17-16w .....Drlg. 3,750 ft.
Syndicate Oil Co.'s No. 1 Mohr, C SW Sec. 2-18-16w ..Shut down 3,670 ft.

RUSSELL COUNTY

Streeter & Stearns' No. 1 Mitchell, SE cor. Sec. 6-15-14w..Total depth 3,390 ft.; abandoned.
Austin Drlg. Co.'s No. 1 Rochfellow, SE cor. Sec. 6-13-12w .....Shut down 1,884 ft.
Gilbreath et al's No. 1 Bratton, C NE Sec. 33-11-13w ....Shut down 1,535 ft.

SEDGWICK COUNTY

Newman et al's No. 1 Bawly, SE NW NE Sec. 2-27-2 ..Drlg. 3,262 ft.

SALINE COUNTY

Twin Mounds Oil Co.'s No. 1 Weis, C W half NE NW Sec. 20-13-4w .....Shut down 2,042 ft.

STAFFORD COUNTY

Boucher Oil's No. 1 Christenson, NW cor. Sec. 22-22-11w..Fishing 3,610 ft.
Boucher Oil's No. 1 Groves, NE cor. Sec. 9-22-11w .....Fishing 2,930 ft.
Midwest's No. 36 Richardson, SE cor. Sec. 36-22-12w ....5,000,000 ft. gas 3,305-08 ft.; show oil and water 3,380-87 ft.; T. D. 3,475 ft.

STEVENS COUNTY

Argus Prod. Co.'s No. 1 Olsen, C SE Sec. 1-32-38w .....R.U.S.T. 2,470 ft.
Argus Prod. Co.'s No. 1 Davis, C SW Sec. 31-32-38w .....R.U.S.T. 2,365 ft.
Argus Prod. Co.'s No. 1 Headrick, C NW Sec. 9-35-37w ..Rigging up standard tools 2,531 ft.
Argus Prod. Co.'s No. 1 Hershey, C NW Sec. 26-34-37w ...Drlg. 2,775 ft.
Argus Prod. Co.'s No. 1 Ehrhard, C NW Sec. 11-35-39w ...Rigging up standard tools 2,538 ft.
Argus Prod. Co.'s No. 1 Wiley, C NE Sec. 4-35-37w .....Rigging up standard tools 2,550 ft.
Argus Prod. Co.'s No. 1 Ridpath, C SE Sec. 27-34-37w ....Rigging up standard tools 2,530 ft.
Argus Prod. Co.'s No. 1 Gibbons, C SE Sec. 29-34-37w ...Rigging up standard tools 2,538 ft.
Argus Prod. Co.'s No. 1 Knier, C SW Sec. 27-34-37w .....Shut down 2,865 ft.
Argus Prod. Co.'s No. 1 Harrison, C SW Sec. 30-34-37w ..Rigging up standard tools 2,412 ft.
Argus Prod. Co.'s No. 1 Irwin, C SE Sec. 10-35-37w .....Rigging up standard tools 2,506 ft.
Braden et al's No. 1 Theisen, SE NE Sec. 6-22-4w .....Rig on ground.
Mangle et al's No. 1 Youngren, C SE NW Sec. 24-32-39w .....Shut down 2,523 ft.
McNabb and Mid-Kansas' No. 1 Rhinehart, C NE Sec. 23-32-39w .....Rig.
McNabb et al's No. 1 Porter, Sec. 4-31-37w .....Fishing 2,590 ft.
W. Sidwell et al's No. 1 Kelly, SW cor. NE Sec. 16-34-38w .....Shut down 1,600 ft.

SUMNER COUNTY

Magnolia Pet. Co.'s No. 1 Shriver, NW SW Sec. 9-23-2 ..Drlg. 2,580 ft.
Disney et al's No. 1 Fay, C E half SE Sec. 14-34-1w ....Rig.
Davidson et al's No. 1 Strickland, SW cor. SE Sec. 12-35-1w .....Rig.

WASHINGTON COUNTY

Sincox et al's No. 1 Penwell, NW SE NE Sec. 16-3-3 ....Shut down 510 ft.

WILDCAT OPERATIONS IN NEBRASKA

FRANKLIN COUNTY

U. R. Drlg. Co.'s No. 1 Brunkle (twin well), C NW SW NE Sec. 2-3n-13w .....Rig.

CHASE COUNTY

Chase Pet. Co.'s No. 1 Ingold, C NE Sec. 24-6n-38w ....U. R. 5-in. csg.; T. D. 4,265 ft.

FURNAS COUNTY

Southwestern Pet. Corp. of Nebraska's No. 1 Montague, SE SW NW Sec. 28-1n-22w .....Shut down 1,750 ft.
Graham Bros.' No. 1 Edwards, NW SW Sec. 13-2n-22w..Shut down 3,250 ft.

PHELPS COUNTY

Trees Oil's No. 1 Bergan, Sec. 22-6-19w .....Rig on ground.

RICHARDSON COUNTY

Norton et al's No. 1 Albin, NE cor. Sec. 26-1-14 .....Drlg. 2,500 ft.

ROCK COUNTY

North Central Dev. & Drlg. Co.'s No. 1 Leonard, SE cor. NE Sec. 14-32-18w .....Drlg. 900 ft.

WEBSTER COUNTY

Mid-Kansas Exploration Co.'s No. 1 Platt, C SE one-half Sec. 2-1n-11w .....Drlg. 2,370 ft.

WILDCAT OPERATIONS IN OKLAHOMA

(Continued from Page 50)

CADDO COUNTY

Abernathy & Brown's No. 2 Houston, Sec. 24-6-11w ....Drlg. 615 ft.
Simms Pet. Co.'s No. 1 Cobsa, SW NW Sec. 24-6-11w ....Rig.

CHEROKEE COUNTY

Weaver & Proctor's No. 1 Benge, NE SE Sec. 8-14-21 ....Shut down 510 ft.

CLEVELAND COUNTY

Harris et al's No. 1 Highbee, SE NW Sec. 20-6-1 .....Shut down 6,518 ft.
Daniels & LeWright's No. 1 Vandever, C SW Sec. 15-7-1w .....Shut down 3,130 ft.

COAL COUNTY

A. M. Van Orden's No. 1 Jamison, SE SW Sec. 31-1-9 ..Shut down 1,668 ft.
Blackwell O. & G. Co.'s No. 1 L. Jackson, NW cor. Sec. 26-3-9 .....Drlg. 3,800 ft.
W. E. McGraw's No. 1 King, C SW NE Sec. 11-1-8e ....Shut down 3,030 ft.

COMANCHE COUNTY

Croy & Young's No. 1 Cline, NW NE NE Sec. 8-3-10w ....Rig.
Shasta Oil Co.'s No. 1 Romwalt, SW NW Sec. 11-2-10w ..Shut down 1,709 ft.
G. W. Stogner's No. 1 Doebel, C SW SW Sec. 3-3-9w ....Shut down 1,450 ft.

GARFIELD COUNTY

Shell Petroleum Corp.'s No. 1 Loomis, C NW NW Sec. 32-23-4w .....Wilcox 6,185 ft.; water 6,281 ft.; abandoned.
E. L. Love et al's No. 1 White, SE cor. NW Sec. 9-24-6w .....Fishing 5,721 ft.

GRADY COUNTY

J. V. Bailey's No. 1 Hubbard, C NE NW Sec. 1-10-6w ...Shut down 100 ft.

GRANT COUNTY

Bu-Vi-Bar and Amerada's No. 1 Hurst, C SW Sec. 25-26-5w .....Drlg. 4,775 ft.
Cowden et al's No. 2 Vollmer, CEL NE SW Sec. 22-25-4w..Shut down 5,640 ft.

GARVIN COUNTY

McMinn et al's No. 1 Carson, NE NW Sec. 5-3-4w .....Shut down 3,026 ft.
Nelson et al's No. 1 Strickland, NE NW Sec. 10-4-3w ..Shut down 2,880 ft.

GREER COUNTY

French's No. 1 Murphy, SW NW SE Sec. 23-7-21w .....Shut down 100 ft.
I. T. I. O. et al's No. 1 fee, C SW NE Sec. 17-6-24w ....Shut down 2,485 ft.

HARMON COUNTY

Harmon-Tex Oil Co.'s No. 1 Hoadley, NE cor. Sec. 17-4-24w .....Fishing 2,380 ft.
S. M. Stauffer's No. 1 Castleman, SW NE Sec. 8-4-26w ..Shut down 625 ft.

HARPER COUNTY

Empire's No. 1 Bruce, C NE SW Sec. 12-25-20w .....Drlg. 5,935 ft.
Sinclair Oil & Gas Co.'s No. 1 Howell, C SW SW Sec. 14-26-24w .....7,000,000 ft. gas; fishing 5,330-40 ft.; spraying oil; shut in; estimated 10,000,000 ft. gas; total depth 6,745 ft.

HASKELL COUNTY

I. T. I. O.'s No. 1 Blake, SW NW Sec. 3-10-21 .....Rig.
Mid-Western's No. 1 Poister, C NE SE Sec. 33-10-22 ....Shut down 3,933-40 ft.
Holden's No. 1 Phillip, SE cor. Sec. 3-9-18e .....Shut down 1,850 ft.
Marion Oil's No. 1 Sanders, NW NE NW Sec. 10-9-18e..Shut down 2,387 ft.
Sanboise Gas' No. 1 Unknown, SW NW SE Sec. 32-9-21e..Shut down 2,100 ft.

HUGHES COUNTY

Wright et al's No. 1 Ott, SE SW Sec. 15-5-11 .....Shut down 1,645 ft.
Canady et al's No. 1 Kanard, NW SW Sec. 29-9-12 ....1,000,000 ft. gas 2,284 ft.; shut down 4,515 ft.
Irwin et al's No. 1 Jones, SE NW Sec. 30-5-10 .....Drlg. 4,270 ft.

KAY COUNTY

Blackwell Oil & Gas Co.'s No. 1 Harshman, Sec. 2-26-1w..Location.
Boucher Oil Co.'s No. 1 Jefferson, NE SW Sec. 32-26-1w .....Drlg. 525 ft.
Alco Royalty Co.'s No. 1 Wolf, SE SW SE Sec. 34-26-2w..5,000,000 ft. gas 4,390-4,420 ft.; shut down.
Blankinship Petroleum Co.'s No. 1 Hansen, SW NW SW Sec. 17-27-2 .....Sand 3,590-97 ft.; swabbed 34 bbls. after 40-qt. shot; pumped 19 bbls. in 7 hrs.

KINGFISHER COUNTY

Prairie and Slick's No. 1 Wright, C NW SW Sec. 23-15-5w .....Shut down 2,740 ft.
Galt Brown's No. 1 Wolf, NW SE Sec. 6-16-7w .....Cleaning out 6,015 ft.

KIOWA COUNTY

Riley et al's No. 1 Grebb, SW NE Sec. 6-7-16w .....Shut down 990 ft.

LEFLORE COUNTY

Red Bank Oil Co.'s No. 1 fee, SE SW NW Sec. 23-9-24 ..Drlg. 6,230 ft.

LATTIMER COUNTY

Limestone Oil & Gas Co.'s No. 1 Murray, NE cor. Sec. 25-5-18 .....Shut down 1,450 ft.

LINCOLN COUNTY

J. J. Deaner et al's No. 1 Knox, NE NW Sec. 28-17-2 ..Wilcox 4,925 ft.; 40 ft. water; abandoned.
Atlantic Oil Prod. Co.'s No. 1 Parker, SE NW Sec. 5-14-6 .....Drlg. 3,990 ft.
Magnolia Pet. Co.'s No. 1 Winship, NE SW Sec. 2-13-4 ..Drlg. 5,252 ft.

LOGAN COUNTY

Slick & Ramsey's No. 1 Jones, SE NW Sec. 24-17-2w ....Drlg. 3,085 ft.
Prairie and Slick's No. 1 Morgan, NW NE Sec. 33-16-1w .....Fishing 5,351 ft.
Eason Oil Co.'s No. 1 Young, C SW NE SW Sec. 34-17-4w..Drlg. 3,556 ft.

McINTOSH COUNTY

Patterson et al's No. 1 Smith, SW cor. NW SE Sec. 32-9-16 .....Shot 240 qts. 5,446-5,559 ft.; shot went off up hole; fishing.

MUSKOGEE COUNTY

Producers & Refiners' No. 1 Finklea, SE cor. Sec. 4-11-19 .....Drlg. 650 ft.
Sioux Oil Co.'s No. 1 Unknown, NW SE Sec. 21-11-19 ....Shut down 1,011 ft.

NOBLE COUNTY

Barnsdall's No. 1 Miksch, NW SW, Sec. 12-21-1 .....Spudding.
Weaver & Craigin's No. 1 Frederick, C SW NE Sec. 4-24-1w .....Shut down 2,425 ft.

OKFUSKEE COUNTY

Henry Oil Co.'s No. 1 Harjo, Sec. 36-12-9 .....Drlg. 3,940 ft.
E. L. Robinson's No. 1 Rice, NW Sec. 2-10-9 .....Location.
Shepard et al's No. 1 Neveas, SE NW SW Sec. 3-12-10..Shut down 3,661 ft.

OKLAHOMA COUNTY

L. C. Hivick's No. 1 Sunset Addition NW SW NW Sec. 17-11-3w .....Shut down 5,515 ft.
Mid-Kansas Oil & Gas Co.'s No. 1 Messer, SW cor. Sec. 32-14-3w .....Wilcox 6,697-6,711 ft.; 2,500 ft. oil in hole.
Prairie and Slick's No. 1 Dill, SE NW Sec. 17-13-3w ....Shut down 6,821 ft.; P. B. to 6,530 ft.
Warr et al's No. 1 Castle, SW NW Sec. 20-11-3w .....Shut down 6,440 ft.
J. F. Cuniff, trustee's No. 1 Church Land, NE SW SE Sec. 17-12-4w .....Shut down 6,700 ft.
Magnolia and Ramsey's No. 1 Johnson, C NE SW Sec. 35-13-3w .....T. D. 7,212 ft.; P. B. to 6,450 ft.; no show.
Ryan Consolidated's No. 1 Lawton, NE NW Sec. 3-11-2w..Shut down 6,903 ft.; recemented; cleaning out.

PAWNEE COUNTY

Sperry et al's No. 1 Mullrap, SE SW Sec. 2-22-5 .....Rig.
L. E. Wentz' No. 1 G. Lilly, SE SW NE Sec. 26-22-3 ....Drlg. 2,050 ft.
Flynn & Morgan's No. 1 Jones, SW NE Sec. 22-20-5 ....Drlg. 2,965 ft.
Cochran et al's No. 1 Green, NE cor. SW Sec. 15-23-5 ....Rig.

PITTSBURG COUNTY

C. Cannady's No. 1 Jones, NW cor. Sec. 14-8-14 .....Rig.
Morgan & Flynn's No. 1 Freeman, NW cor. Sec. 1-20-5 ..Drlg. 1,000 ft.

POTTAWATOMIE COUNTY

Apex et al's No. 1 Walker, NW SE Sec. 18-7-13 .....Drlg. 50 ft.
The Texas Company's No. 1 Knight, SW SE Sec. 3-8-3..Drlg. 4,641 ft.

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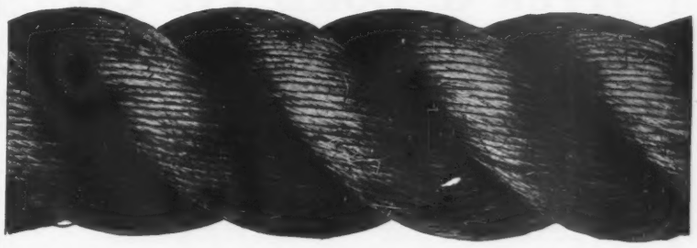

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ROGER MILLS COUNTY
Bucy & Stone's No. 1 Williams, C SW Sec. 23-12-24w ....Shut down 2,245 ft.
L. C. Hivick's No. 1 Davis, C NW NE Sec. 4-11-26w ....Shut down 2,905 ft.

SEMINOLE COUNTY
Pure Oil Co.'s No. 1 Shaffer Ashby, SE NE Sec. 22-7-5 ..Wilcox 4,302-05 ft.; water; 118 bbls.; completed.
Sunray Oil Co.'s No. 1 Sunday, NW SE Sec. 35-5-5 ....Location.

WASHITA COUNTY
Kauffman et al's No. 1 Nelson, NE cor. Sec. 1-8-14w ....Shut down 1,235 ft.
Petroleum Holdings, Inc.'s No. 1 Musie, NW cor. Sec. 10-9-20w ....Shut down 280 ft.

WOODS COUNTY
Gypsy-Prairie et al's No. 1 Thompson, SE cor. SW Sec. 10-25-15w ....Shut down 6,104 ft.
Sinclair Oil & Gas Co.'s No. 1 Showwalter, C SW SW Sec. 33-27-16w ....Drlg. 7,226 ft.

WOODWARD COUNTY
Farrond et al's No. 1 Unknown, SE cor. SW SE Sec. 2-22-17w ....Shut down 1,387 ft.
Prairie Oil & Gas Co. et al's No. 1 Wilbur ,NE cor. NW Sec. 22-23-17w ....Shut down 7,445 ft.
Burgoyne Brothers' No. 1 Merkins, SW cor. SE NE Sec. 15-21-19w ....Shut down 1,910 ft.

OKLAHOMA PANHANDLE

CIMARRON COUNTY
Magnolia's No. 1 School Land, C SW NE Sec. 27-5-5 ....Drlg. 4,260 ft.

TEXAS COUNTY
Argus Prod. Co.'s No. 1 fee, C SW Sec. 36-5-14 ....Drlg. 600 ft.
Argus Prod. Co.'s No. 1 Fischer, C NW Sec. 29-6-14 ....Location.
Argus Prod. Co.'s No. 1 Parker, C NW NW Sec. 18-6-15..T. D. 2,831 ft.; 2,500,000 ft. gas.
Three Way Oil Co.'s No. 1 Crane, SW NW Sec. 11-1-18 ....Drlg. 4,425 ft.
Palo Alto Oil Co.'s No. 1 Graves, NE SW SW Sec. 23-2-18e ....Spudded; shut down.

SOUTHERN OKLAHOMA

ATOKA COUNTY
Bryan-Croxton's No. 1 Mason, NW SE NW Sec. 4-1s-14 ..Shut down 1,850 ft.
Brookshire's No. 1 Guinn, NW cor. Sec. 18-3s-10 ....Shut down 100 ft.

BRYAN COUNTY
Bryan County Oil's No. 1 Childs, NW SE SW Sec. 8-7-10..Drlg. 200 ft.
Bush et al's No. 1 Commerce Trust, NE cor. Sec. 35-6s-9 ....Shut down 525 ft.
Johnson et al's No. 1 Ussery, SE SW SE Sec. 14-16s-7e ..Shut down 485 ft.
Marshall's No. 2 fee, C SW NW Sec. 26-5s-7 ....Shut down; 6-in. csg. 265 ft.

CARTER COUNTY
Campen-Lasater Co.'s No. 1 Anderson, NE cor. SE NE SE Sec. 32-4s-2 ....Shut down 2,590 ft.

CHOCTAW COUNTY
Choctaw Petroleum Co.'s No. 1 Wilson, SW cor. SW Sec. 15-6s-19e ....Shut down 1,345 ft.

COTTON COUNTY
H. J. Dillard's No. 1 McMillan, SE NW Sec. 2-4s-13w ....Shut down 2,705 ft.

LOVE COUNTY
Hobbs et al's No. 1 Roberts, NE cor. SW Sec. 20-6s-3w ..Shut down 3,130 ft.
Gilcrease Oil's No. 1 Burkhart, NE NW Sec. 13-6s-1 ....Rig.

MARSHALL COUNTY
Pace et al's No. 1 Hicks, SW NW Sec. 8-6s-7 ....Drlg. 1,070 ft.
McCrory et al's No. 1 Adams, NE SW SE Sec. 31-7s-6 ....Rig.
Akers et al's No. 1 Spicer, SW SE SE Sec. 33-5s-7e ....Shut down 370 ft.

McCURTAIN COUNTY
Milton et al's No. 1 Vase, SW NW Sec. 26-6s-21 ....Shut down 2,287 ft.

STEPHENS COUNTY
Obermyer et al's No. 1 Skelton, NE SW SW, Sec. 32-15-7w ....Rig.
R. Southard's No. 1 McKinney, NE cor. Sec. 25-1-8n ....Shut down 1,060 ft.

CLOSE CONTACT WITH OIL INDUSTRY NEEDED IN TECHNICAL EDUCATION

By Edward Steidle
Dean, School of Mineral Industries, Pennsylvania State College.

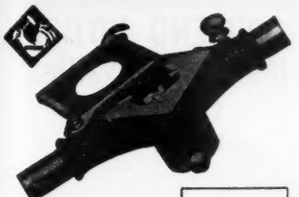
The United States owes its greatness to the pioneering class in the mineral industries. Once more these men are in great demand, for perhaps different purposes; to utilize limited natural mineral resources better. The location and extraction of raw materials from the ground, their treatment for fuels, or their reduction and processing into useful shapes and products is being recognized more and more as a job for trained mineral technicians. In this mineral age the higher education of technical men and research applied to scientific development are the country's most powerful weapons of competition and defense. The colleges must supply promising young men who have a foundation in pure science, pyramided with applied science, tempered with a cultural background and a studious and keen appreciation of human nature, labor problems and consumer demands. The responsibility of training these men in plant practices and operations rests with industry.

The mineral industries are in a dynamic state. Invention, scientific discoveries and research, are hurling problems at the industries at a more rapid rate than ever before. A few years ago the petroleum industry was operated almost entirely by rule of thumb methods and in some branches even this rule was lacking. Wells were drilled on the strength of hunches and dreams without any consideration of structure or possible reservoir rocks. Wells which produced from depths of 3,000 feet were subjects of note and it was predicted that much greater depths would never be practicable. Oil was pumped into tank-like shells and boiled to remove such distillates as were desired or could be obtained. Wax removal from heavy residues was of the crudest nature possible.

The advent of the geologist, production engineer and the refinery technologist has so changed the picture of the industry within the past few years that it can hardly be recognized by one accustomed to old methods of operation. There is also a trend toward refinancing and consolidating or merging of operating companies and the solution of many of the larger economic problems lies in this direction. Revolutionary changes of a similar character are taking place in all branches of mineral industries such as metal and coal mining, fuel technology, metallurgy, and ceramics.

Mineral industry education, like the industries, is in a state of flux. Colleges must take inventory of their physical plant, organization, and work, in order to find where improvements can be made. There are nearly 60 state and privately endowed colleges in the United States giving courses in one or more branches of the mineral industries. In some cases the schools are separate institutions and several of these are now entering the field of chemistry and engineering. In other places, mineral industry courses are grouped under engineering, in others the different courses are separate departments administered under engineering, while in others the mineral industry courses make up a distinct school of the college, similar to agriculture, engineering, liberal arts, et cetera. This lack of uniformity is regarded in many quarters as a serious weakness in mineral industry education.

The first curriculum in mineral industry education was in mining engineering, hence the traditional name, School of Mines. This name is still used at a number of leading institutions but has outlived its usefulness for schools in land grant colleges, and other publicly supported institutions, in states endowed



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with varying mineral resources and industries. In such states there is fully as much justification for schools of mineral industries as for schools of agriculture.

Under One Head

The ideal organization, from a pedagogical viewpoint, is to have all work pertaining to the mineral industries under one head. Such work would embrace geology, mineralogy, and geography, as well as oil and gas production and refining, mining, fuel technology, metallurgy and ceramics. Independence makes for prestige, individuality, initiative and efficiency. The usual "ifs" and "buts" and other alibis are eliminated.

Mineral industry courses are as individual as courses given under agriculture and engineering. For example, mining and oil and gas production are the application of the sciences and engineering to the exploitation of mineral deposits. Oil refining is the application of the organic and physical chemistry of hydrocarbon compounds. Metallurgy is more largely the applied chemistry of metals, ceramics the applied chemistry of clays and synthetic silicates, fuel technology the applied chemistry of fuels, while geology, mineralogy, and geography stand by themselves. There are probably more than 500 men engaged in mineral industry education in the United States but there is no society for the promotion of mineral industry education. Relatively few of these educators belong to any other society for the promotion of education, principally because none of them fits their needs. There are already too many societies in existence of one kind or another but mineral industry education will never come completely into its own until the men engaged in the work are organized and carry on a progressive platform.

Business Needs

As there should be more education in mineral industries, so must there be more business in mineral education for, after all, education is a business and may well follow business principles. The high school graduate is raw material which must be processed into a marketable product. In turn, the product must be sold to the consumer, the mineral industries, and then serviced until assimilated. On the success of the product will depend the success of the school or the college in the last analysis. Because of small enrollment, the instructional cost at some schools is extremely high. These high cost schools are going out of business, while a number of the low cost schools are expanding their programs.

Mineral industry educators should not rest too heavily on the technical societies. They alone cannot cure the ills of schools any more than they can cure the ills of industry. Societies can do a lot of good, but surely the schools must stand on their own feet and work out their own salvation.

Many schools lack close contact with the industries. The day is past when a school can hang out its shingle and take the business that happens to come its way. The school is really a part of industry and can best serve the industry by having organized contact with it. This may be accomplished through advisory boards made up of leading operators, engineers and scientists. The members of the board will have more than passing interest in the school and will give their best council. The student, having been educated under suggestions and advice from the boards, will be given preferential treatment in being placed after graduation.

Contact With Industry

Another method of keeping in close contact with industry is through the establishment of mineral industry experiment stations similar to agricultural experiment stations. These will form powerful aids to graduate instruction which is so essential in the training of men properly qualified for the highest type of research. The mineral industries are beginning to realize that they must take full advantage of research. They appreciate that the present slow progress in their industries, is due, in a large measure, to lack of research and of young men suitably trained in research in these

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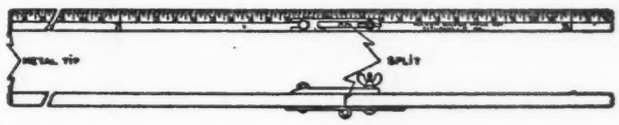

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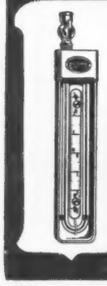

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industries. They have seen the outstanding prosperity of manufacturing industries that have taken advantage of research and are taking this lesson to heart and inquiring as to what research may do toward improving their conditions. They are asking for men trained in methods of research with particular reference to locating, producing, processing and marketing mineral substances. Contact with the research staff of the experiment station will be stimulating and helpful to the undergraduate students and the instructional staff. The plan should provide facilities for part-time and summer period research by the instructional staff. It is believed that the industrial contacts made through the experiment station work will make the teaching facilities of a mineral industries school better known to the people of the state and the men of the industry.

In land grant colleges and state universities the mineral industries experiment station will be the logical agent for carrying out such departmental state investigations as may require laboratory and research facilities.

Extension Courses

It was once said, "though it may be impossible to bring the masses requiring education to the university, may it not be possible to take the university to them?" Thus began the extension idea, which has become an important factor in American education. The education of better mineral workers offers a fertile field for "taking the university to the masses," thereby strengthening the bond with industry. State institutions must open their services to all. The character of the mineral industries prevents a wholesale exodus into classrooms. Future plans of all state schools should embrace a strong recognition of the value of extension service. Some of the petroleum extension work can be carried on under the Federal Smith-Hughes plan in cooperation with the State Department of Public Instruction.

It is well to dispel any popular belief that the geologist, the oil and gas production engineer, or the refining technologist is always mussing with fossils, oil smears or a dozen varieties of gas odors. On the contrary, the successful man in these professions most likely finds himself in the chair of an executive, a skilled specialist directing forces that turn the wheel of big industries.

Must Work With Schools

Mineral industry educators must also work in close co-operation with the public school system of their respective states. While the initiative must be taken by the mineral industry educator, the public school official will be very willing to co-operate, especially in the schools located in mineral industry centers where his job depends on a healthy prosperous industry. Some elementary work could well be given as early as the third grade, covering interesting things about the mineral industries especially those located near at hand. In this way the younger generation would not be educated away from the mineral industries by the electric train, steam engine, and other mechanical toys. In connection with the popular science courses in the high schools, additional work might be given to offset the more popular trend of the mind of the youth as influenced by the radio, automobile, airplane or chem-kraft set.

Every phase of education has its rapid growth, inflation and deflation. Schools of mineral industries have reached the threshold of a healthy and dignified period of progress. The public does not appreciate the vital relationship of the mineral industries to civilization and its history, nor the great economic importance of these basic industries to the life and prosperity of the state or nation. The state schools should challenge the state as a whole to compare any industry to the mineral industry and to refute the statement that proper state education of mineral technicians will pay the greatest dividends. Mineral industry educators must not hesitate to advertise their wares. The combined efforts of the industries, the schools, the societies and the trade and technical journals can make the world "mineral minded."

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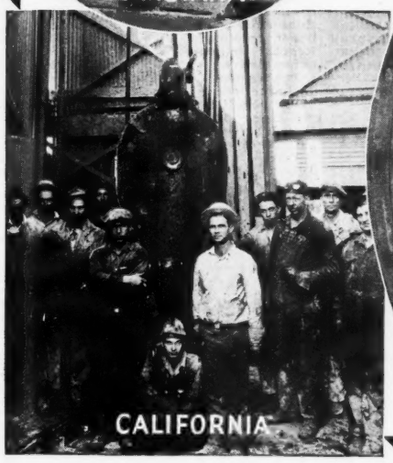
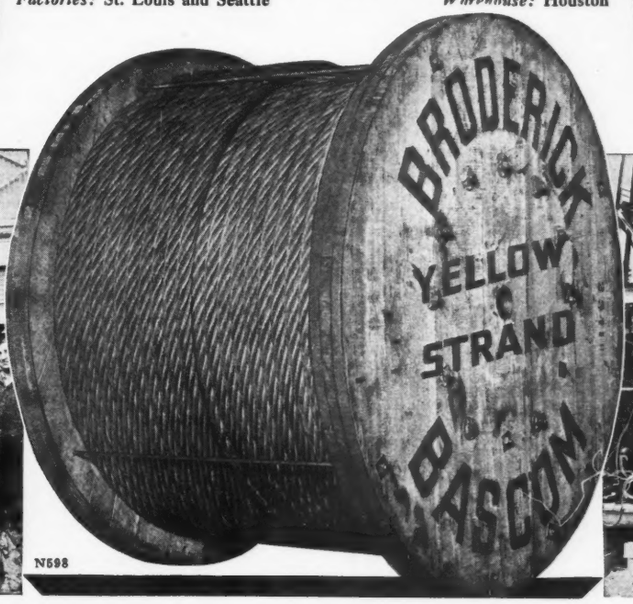
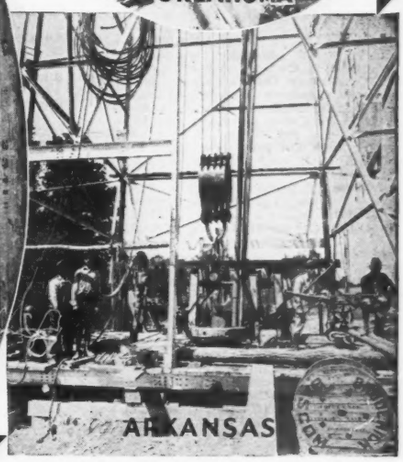
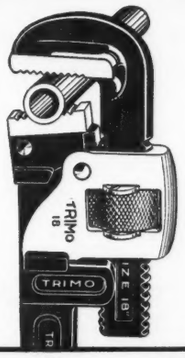
BRODERICK & BASCOM ROPE CO., St. Louis, Mo.

Factories: St. Louis and Seattle *Warehouse:* Houston









Strength - Safety

TRIMO's leadership in the oil fields is based on no trick claims, no flash in the pan wave of popularity.

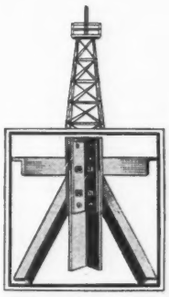
Strength and safety have made TRIMO first choice. The handle is drop forged not cast — and heat treating gives the extra toughness to stand terrific strain.

TRIMO is made throughout by a company pledged for over forty years to fine tool making.

TRIMONT MFG. CO., INC., Roxbury (Boston), Mass.

TRIMO

TRIMO
Pipe Wrench



WASHINGTON DERRICKS

Write for Catalogue

O'Brien Steel Construction Co., Inc.
Washington, Pa.

Western Representative:
Rig Equipment Company
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Joint Construction

Particular attention is directed to the ingeniously provided triple strength in the patented joints of Washington Derricks.

At first glance, this construction may seem similar to other steel derrick joints but close examination will reveal a greater amount of reinforcement and a simpler provision for butting and tightening as the derrick is erected.

The Washington joint will stand out in any comparison with structural derrick joints as possessing maximum strength and as providing great rigidity to the derrick. Many users have remarked that there is less vibration in this derrick when spudding-in than with any other derrick they have used.

WASHINGTON STRUCTURAL STEEL DERRICKS